

STH

The



CHEMIST AND DRUGGIST

for RETAILER — WHOLESALE — MANUFACTURER

AUGUST 2, 1952

**NOW BEING
NATIONALLY ADVERTISED**

An attractive looking preparation and one of the famous **WRIGHT'S** products—it is now in unrestricted supply

masses of lather



*It's right for
both of us!*



Soapless—rather!

Every member of the family should use this delightful soapless shampoo with its invigorating coal-tar freshness. Scientifically medicated. Economical in use.

Retail Price 2/-
Including Purchase Tax.

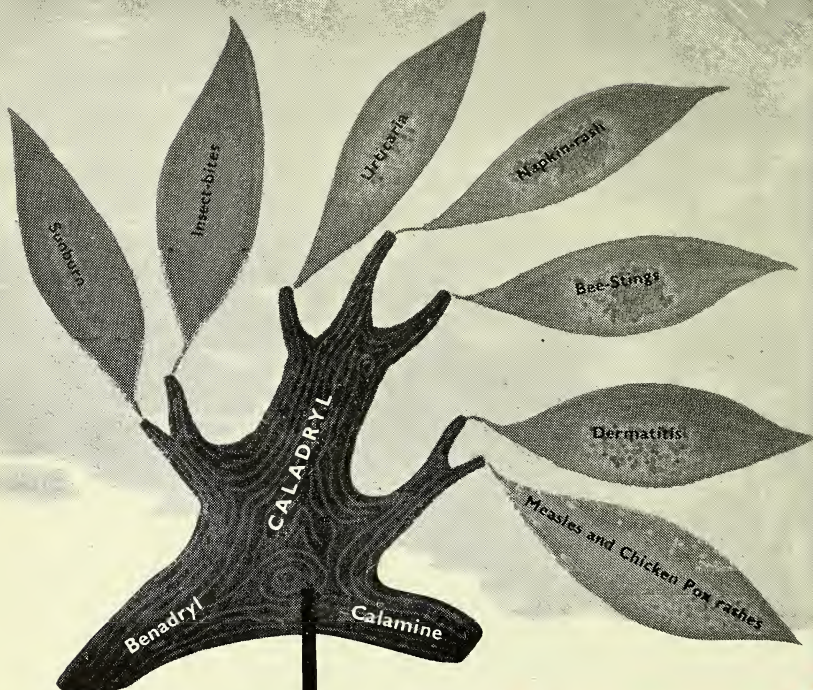
**Wright's
COAL TAR SOAPLESS
LIQUID SHAMPOO**

MADE BY THE MAKERS OF FAMOUS **WRIGHT'S** PRODUCTS

**WRIGHT LAYMAN
& UMNEY LTD.**

42-50 SOUTHWARK ST.
LONDON, S.E.1.

Tel : HOP 4021 (10 lines)



for the relief of skin irritation

CALADRYL

The ability of Benadryl® to relieve the itching and irritation that accompany many allergic and non-allergic skin affections, has led to its widespread use by local application.

Caladryl® combines Benadryl with calamine in the form of a creamy and non-greasy lotion. Its soothing, antipruritic and mildly analgesic action is of particular value in alleviating sleeplessness and the impulse to scratch the affected part in cases of skin irritation in young children.

Bottles of 4 fluid ounces 4½ (inc. P.T.)
Bottles of 80 fluid ounces 75/- (inc. P.T.)

PARKE, DAVIS & COMPANY, LIMITED Inc. U.S.A. • HOUNSLOW, MIDDLESEX, ENGL

W. E. MEDICAL

CHEMIST FINDS NEW WAY TO HELP COUNTERACT DROP IN SALE OF LUXURIES

JUST now, when more and more chemists are experiencing a fall in demand for certain luxury products, this experience of a chemist in Liverpool is especially interesting.

"For some time" he writes, "I had been wondering how to make up for the drop in demand for luxury goods. Then, one evening at home, last summer, I happened to notice a tin of Sanilav perfumed lavatory cleaner, and the idea flashed through my mind 'how would it go in the shop?'"

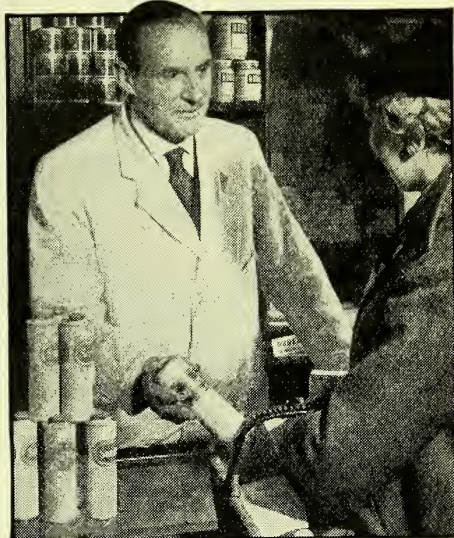
"Here was a particularly attractive pack; a product closely linked with hygiene, so very suitable for a chemist; and since it was made by the Ibcos people—I knew from experience that the quality was bound to be good.

"Anyway, I decided to try out a dozen tins in the shop. If they did not sell, there would be no harm done, we could quite easily use them up in the home.

Surprised by demand

"On delivery, I put a few tins on display on the counter, and to my surprise they started selling right away and in 3 or 4 days I found I had sold out. Since then Sanilav has settled down to a regular sale of between 2 to 3 dozen a month. It was certainly an experiment well worth trying, and I feel fairly convinced that Sanilav would enjoy a worthwhile sale in any chemist's shop."

Sanilav is the most efficient of all



★ *Women of all social classes are increasingly particular about keeping their homes, hygienically fresh and fragrant—hence the rapidly growing demand for Sanilav, the perfumed lavatory cleaner.* ★

lavatory cleaners, because it does four jobs in one. (1) Keeps the lavatory bowl and bend sparkling white right through. (2) Kills dangerous germs with its powerful disinfectant action. (3) Destroys unpleasant smells. (4) Leaves the air beautifully fresh and fragrant. All that's required with Sanilav is to sprinkle overnight and flush next morning.

IF YOUR WHOLESALE CAN'T SUPPLY YOU, POST THIS COUPON

We would like your representative to call

Name.....

Address.....

Post in unsealed 1½d. stamped envelope to
Ibco Products Ltd., River Road,
Barking, Essex.



Sanilav, the new "sprinkle" lavatory cleaner with the fragrant perfume, has a really attractive pack, which makes it ideal for display in a chemist's shop.

EVAN WILLIAMS Shampoo



Every direct order for this popular shampoo will include one of these attractive Counter Sale Display unit

Each unit holds 1 dozen CAMOMILE Shampoos and 1 dozen HENNA Shampoos, and will fulfil the double function of a handy counter dispenser and a silent salesman, for the shampoo that has been the choice of discerning women for over half a century.

Evan Williams Company Ltd., Sales Dept., Aintree Road, Perivale, Mid



His business is E·X·P·A·N·D·I·N·G

How about yours?

We FREEZEHEATS can be trusted to produce the tops in stoppers! Never before in picnic history has there been a vacuum flask stopper that *couldn't* pop out . . . *couldn't* leak . . . *couldn't* taint the tea.

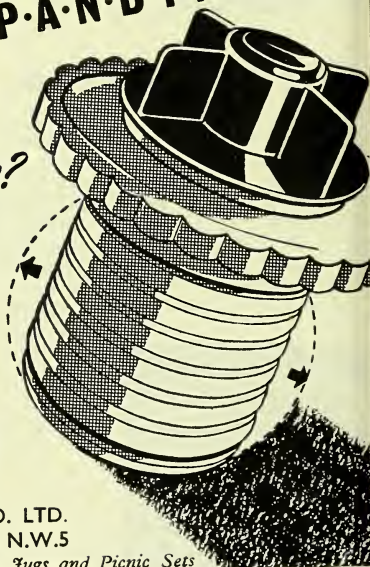
But that's exactly what the SEAL-A-VAC can't do, because it *expands* to fit in the neck of any standard size flask, on a principle patented by the Freezeheat family. The mouths of a million vacuum flasks are watering for a Seal-a-Vac. See how swiftly—and profitably—an attractive two-dozen display carton will clear itself on *your* counter

SEAL-A-VAC

produced by THE BRITISH VACUUM FLASK CO. LTD.

Lissenden Works, Gordon House Road, London, N.W.5

Makers of the famous FREEZEHEAT Vacuum Flasks, Jugs and Picnic Sets





Sales & Sunshine

- ★ Even more attractive advertisements
- ★ A new, large, full colour showcard
- ★ Full supporting range including a new counter Dispenser
- ★ Profitable Bonus Parcels
- ★ Dressed Window Displays to link up with our Summer Advertising Campaign

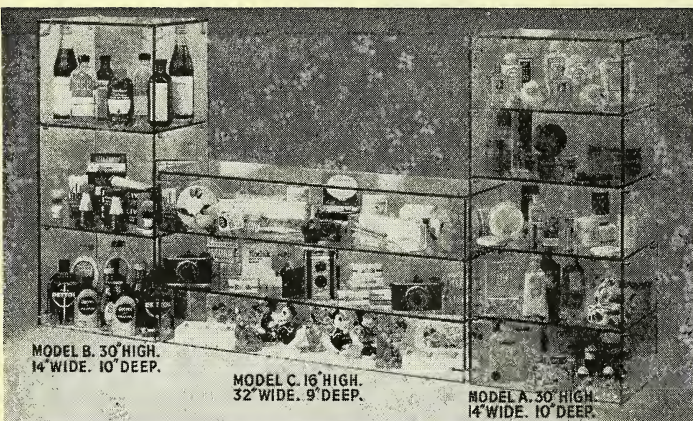
CROOKES Lacto-Calamine LOTION



A leaflet giving full particulars of the range of Bonus Parcels is being mailed to all Retail Chemists but copies are available on request.

PATA





MODEL B. 30" HIGH.
14" WIDE. 10" DEEP.

MODEL C. 16" HIGH.
32" WIDE. 9" DEEP.

MODEL A. 30" HIGH.
14" WIDE. 10" DEEP.

Display Sells Goods

The prices quoted include carriage, and insurance to any address in England and Wales. Packing cases are chargeable and returnable. Delivery of standard sizes from stock; other sizes and types can be supplied at equally competitive prices; and most showcases can be fitted with sliding or hinged doors at extra cost if desired.

Model "A"—£5.12.9

Model "B"—£4.11.9

Model "C"—£4.19.3

WILLIAM GOODE (GLASS DISPLAY) LTD
19 CLIFTON ROAD, RUGBY, WARWICKSHIRE. Phone: Rugby 3

Display Your Merchandise in 1/4" glass Showcases

SPECIALLY DESIGNED

Convenience and Security with inside corner fitting

The set of three showcases illustrated above will be supplied for

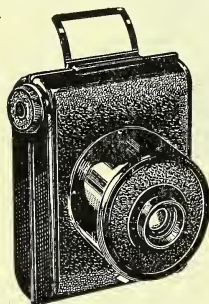
£14.1

If two Model "A" ordered with one Model "C" - £15.1

If two Model "B" ordered with one Model "C" - £13.1

2½% extra for 10" deep Model "C" Showcases

3½% discount may be deducted from the price quoted for Cash with Order



PRICE **15/-** TAX PAID

- ★ FINEST MENISCUS LENS
- ★ RELIABLE SHUTTER
- ★ TOUGH MOULDED BODY
- ★ PLATED METAL PARTS
- ★ TAKES ALL 127 FILMS
- ★ 16 PERFECT PICTURES 3 x 4 cm.
- ★ SHARP WHOLE PLATE PRINTS

Give Your Sales a Tonic with the new V. P. TWIN Camera

BRITAIN'S LOWEST PRICED RELIABLE CAMERA IS READY FOR DESPATCH—IT SPELLS BIG BUSINESS FOR YOU—IF YOU ACT NOW

GET A SAMPLE DOZEN CAMERAS RIGHT AWAY—HERE IS A BREAKDOWN OF THE COST—NO POSTAGE TO PAY AND NO CHARGEABLE CONTAINERS TO RETURN.

1 DOZEN V.P. TWIN CAMERAS INDIVIDUALLY (& ATTRACTIVELY) BOXED. FULL INSTRUCTIONS DEALER DISCOUNT 33½%

CASH DISCOUNT 2½%

TOTAL

Price	P.T.
126/-	54/-
42/-	
84/-	
2/1	
81/11	
	135/11

**CAMERA
SALES
DIVISION**

Corfield

**K. G. CORFIELD LTD, MERRIDALE WORKS, MERRIDALE STREET
WOLVERHAMPTON. PHONE W-TON 25283**

**CAMERA
SALES
DIVISION**

INDEX TO ADVERTISERS

Acme Vacuum Flask Co.,	8	Distillers Co. (Biochemicals), Ltd.,	23
Ayrton, Saunders & Co., Ltd.	8	Duncan, Flockhart & Co., Ltd.,	v
Baillere, Tindall & Cox	25	Dundee Technical College	24
"Belfast Telegraph"	xxvii	Dunn Brothers Succrs., Ltd.,	iv
Bell, John, Hills & Lucas, Ltd.,	28	Edme, Ltd.,	13
Bio-Colloids, Ltd.,	xx	Evan Williams Co., Ltd.,	2
Blyton, Astley & Co., Ltd.,	Leader Page	Evans, Gadd & Co., Ltd.,	iii
Boehm, Fredk., & Co., Ltd.,	ii	Evans Medical Supplies, Ltd.,	7
Bradford Technical College	27	Export Review, The	xxviii
Brighton Technical College	26	Fatoils, Ltd.,	vi
Bristol College of Technology	26	Ferris & Co., Ltd.,	xxii
British Drug Houses, Ltd., The	5	Ferro Metal & Chemical Corporation, Ltd.,	xxiii
British Vacuum Flask Co., Ltd.,	2	Foyles, W. J., Ltd.,	26
Brook, Parker, Ltd.,	xxiii	Franco-British Glass Co., Ltd.,	xvi
Brome & Schimmer	xxii	Franks, A., & Bartlett Co., Ltd.,	xi
Brumleu, Wm., Chas.,	xxviii	Freudentheil, Smith & Co.,	Leader Page
Burrough, James, Ltd.,	29	Gale, Baiss & Co., Ltd.,	vi
Burroughs Wellcome, Ltd.,	29	Gardiner & Co. (The Scotch House), Ltd., ..	xvi
Cardiff Technical College	24	Glastics, Ltd.,	14
Carnegie Brothers (1949), Ltd.,	15	Gledhill, G. H., & Sons, Ltd.,	xvi
Carr's Cereal Products, Ltd.,	Leader Page	Golden (Coloral), Ltd.,	xxi
Ciba Laboratories, Ltd.,	30	Goode, William (Glass Display), Ltd.,	4
Coates & Cooper Ltd.,	iv	Gosheron, John, & Co., Ltd.,	xviii
Cooper Laboratories, Ltd.,	xxii	Goya (Men's Division)	21
Cornfield, K. G., Ltd.,	4	Graesser Salicylates, Ltd.,	xxix
Cox, Arthur H., & Co., Ltd.,	Cover iv	Halewood Chemicals, Ltd.,	vi
Craig & Parsons, Ltd.,	xxiv	Hardy, M. W., & Co., Ltd.,	22
Cresswell Bros. Sponges	xv	Harley, T., Ltd.,	xvi
Crookes Laboratories, Ltd.,	3	Harringtons	xx
Cussons, Sons & Co., Ltd.,	Cover iii	Harris Institute	24
Cuticura Preparations	xxvii	Heriot-Watt College, The	24
Cuxson, Gerrard & Co., Ltd.,	12	Herts Pharmaceuticals, Ltd.,	6
Daniel, H. E., & Co., Ltd.,	v		
Daniel, Richard, & Son, Ltd.,	13		
Dearborn (1923), Ltd.,	14		

(continued overleaf)

VOLPAR

TRADE MARK

VOLuntary PARENthood



Volpar Gels Bottle of one doz; Pharmacists 1/8 Retail 2/6 ★ Volpar Paste Collapsible tube; Pharmacists 1/8 Retail 2/6
Volpar Paste and Applicator; Pharmacists 4/- Retail 6/-

THE BRITISH DRUG HOUSES LTD. LONDON N.1

INDEX (cont.)

Howard, Lloyd & Co., Ltd.	xii, xiii	Potter & Clarke, Ltd.	18,
Huddersfield Technical College	26	"Radio Times"	x
Ibco Products, Ltd.	1	Ransom, Wm., & Son, Ltd.	x
Impact Extrusions, Ltd.	xvi	Rayner & Co., Ltd.	x
Ingram, J. G., & Son, Ltd.	12	Riddell Products, Ltd.	x
International Bottle Co., Ltd., The	xix	Roche Products, Ltd.	x
Jeffreys, Miller & Co., Ltd.	xx	Rotherham College of Technology	x
Johns, Son & Watts, Ltd.	xvii	Riley, J., & Sons, Ltd.	xx
Kearsley, C. & G., Ltd.	xvi	Sacker's Hygienic Comb Co., Ltd.	x
Kellys, John (London), Ltd.	11	Shadeine Co.	x
Kemball, Bishop & Co., Ltd.	20	Smith & Hill (Chemists), Ltd.	x
Macdonald & Son, Ltd.	16	Standard Synthetics, Ltd.	x
Mandleberg J., & Co., Ltd.	viii	Stewart, Goodall & Dunlop, Ltd.	x
Manser, Henry, Ltd.	xvi	Sumner, R., & Co., Ltd.	x
Monmouthshire Technical College	28	Thornton & Ross, Ltd.	xx
Murray, S., & Co., Ltd.	xvii	Tunnel Glucose Refineries	x
Mysore, Trade Agent for London	iii	Tye, John, & Son, Ltd.	x
National Glass Works (York), Ltd.	ix	University of London School of Pharmacy ...	x
Niblett, C. P.	xxiii	Universal Metal Products, Ltd.	x
Northern Polytechnic	24	Vacco, Ltd.	x
Odentent Co., The	Leader Page	Wallis Laboratory, Ltd., The	Leader Page
Orridge & Co.	Col. Supp.	Ward, Blenkinsop & Co., Ltd.	xxv
Ortho Pharmaceuticals, Ltd.	x	Washington Chemical Co., Ltd.	xxv
Oxford University Press	27	Wesley, Harold, Ltd.	x
Parke, Davis & Co., Ltd.	Coxer ij	Wilcox, Jozeau & Co., Ltd.	Leader Page
Peboe, Ltd.	vi	Wilkinson, S. W., & Co., Ltd.	xx
Pharmax, Ltd.	xxv	Wolverhampton & Staffordshire Technical College	x
Pierson, Morrell & Co., Ltd.	xviii	Wood Bros. Glass Co., Ltd.	x
Plymouth & Devonport Technical College	24	Woodward, G. O., & Co., Ltd.	Leader Page
Portsmouth Municipal College	28	Wright, Layman & Umney, Ltd.	Front Cover
		Yardley & Co.	x

...another unusual use for 'Sleek'

Gleaming, beautiful pieces of stained glass can cut and scratch the nimblest of fingers, and this artist-craftsman recognises the value of skin-smooth 'Sleek'. Finger-tips covered with 'Sleek' are no less deft, and how confidently the work proceeds in skilled hands so surely protected.

to emphasise 8 selling qualities

Yes, 'Sleek' does get put to some intriguing uses. These unusual jobs lend dramatic emphasis to the unique qualities which make 'Sleek' a best seller.



**WATERPROOF
GREASEPROOF
WASHABLE
SMOOTH · THIN
STRONG · PLIABLE
NON-FRAYING**

Retail Prices: 2½ YARD ROLLS, 1 inch—1/3 ;
5 YARD ROLLS, 1 inch—2/-; 2 inch—3/6; 3 inch—5/-; 4 inch—6/-

Also

'HANDYPLAST' elastic wound dressing

With an AIR-STRIP to promote quicker healing.
Strips, 1½" and 2½" wide and packs of assorted dressings.

'LEUKOPLAST' zinc oxide adhesive plaster

Laboratory controlled to ensure constant and uniform quality of the cotton cloth and adhesive strength
In 5 yd. and 10 yd. rolls, ½", 1", 2" and 3" wide.

HERTS PHARMACEUTICALS LIMITED, Welwyn Garden City, Herts. Telephone: Welwyn Garden 333.



ST 3

EVANS

Growth factors in Liver

HEPOVITE ***Proteolysed Liver Tablets***

EACH ONE GRM. TABLET contains 0.5 gm. Proteolysed Liver (Evans), equivalent to approximately 3 gm. of fresh liver.

ADMINISTRATION of liver powder in an average dosage of 1.2 gm. per day for thirteen weeks to children on a normal diet resulted in these children gaining 20% more in height and 40% in weight than a control series who did not receive the supplement. (Yudkin (1952) *Brit. med. J.* 1,1388.)

PROTEOLYSED LIVER contains factors in addition to streptogenin and vitamin B₁₂, which are potent growth stimulants. (Kodicek & Miftry, (1952) *Biochem. J.* 51,108.)

Hepovite Proteolysed Liver Tablets are available in containers of 24. Further information on request to Medical Information Department, Speke, Liverpool, 19.

EVANS MEDICAL SUPPLIES LTD
Liverpool and London



New "ACME" Products you should not fail to stock

"EVERYBODY'S"

1 Pt. MODEL

With bell-shaped cup
RETAIL PRICE 4s. 6d.

*With large cup as
illustrated*
RETAIL PRICE 4s. 11d.

*Made of corrugated rust
resisting tinfoil, assor-
ted in a variety of colours
with aluminium shoulder.*

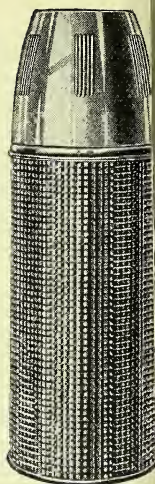
**PROMPT
DELIVERY**

"GLITTOVAC"

1 Pt. MODEL

RETAIL PRICE 5s. 11d.

*Made of strong aluminium
with scintillating cross-
grained finish, translucent-
ly lacquered to prevent
tarnish. Mirror polished
aluminium shoulder, com-
position topped cork.
Extra large Polystyrene
cup with grip ridges in a
variety of colours.*



ACME VACUUM FLASK CO.
PHOENIX WORKS, BRIDGEND, GLAM.

LONDON ADDRESS:—BALFOUR HOUSE, 119-125 FINSBURY PAVEMENT, E.C.



SURGICAL DRESSINGS

complete range

means

AYRTON SAUNDERS & CO. LTD
LIVERPOOL

YARDLEY

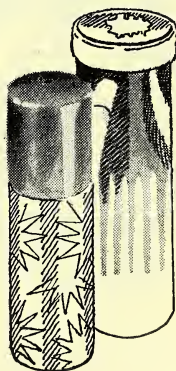
* The introduction of Yardley Crystallised Lavender marks a new trend in portable perfume for smart, busy women. It brings your customers for the first time Yardley Lavender perfume —Crystallised. **It contains no menthol.** It is highly concentrated. In fact, it is identical Yardley Lavender in solid non-spill form, packed in an attractive lightweight case for the handbag for women to carry with them wherever they go.

Crystallised

* Yardley Crystallised Lavender is being promoted with the vigour that a new fashion deserves. Advertisements in full colour and black and white are appearing in all the smartest women's magazines and in the national and provincial newspapers — the combined readership of which runs into many millions. Be ready to meet the growing tide of demand!

LAVENDER

Yardley 33 Old Bond Street London



VACCO*Vacuum
Vessels*

Wide mouthed
2 pint Vacuum Jar
Model J.101

2 pint
Vacuum Flask
Model Q.F.

1 pint
Vacuum Flask
Model S.C.

1 pint Plastic
Vacuum Jug
Model P.J.

All the models in our range are fitted with VACCO refills of extra high thermal efficiency. This ensures minimum temperature change — hot contents keep piping hot and cold contents keep icy cold.

MADE IN ENGLAND

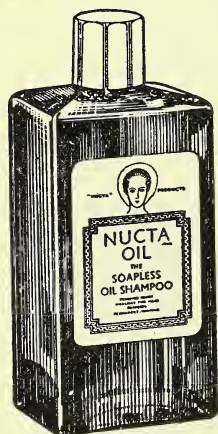
Enquiries to:

VACCO LIMITED
Grosvenor Gardens House,
Grosvenor Gdns., London, S.W.1.

NUCTA OIL

**THE SOAPLESS
OIL SHAMPOO**

with the scalp penetrating action



AVAILABLE FOR COUNTER SALE
In 4 oz. size selling at 2/-
(18/- per doz. plus tax)

In 8 oz. size selling at 4/-
(28/- per doz. plus tax)

**A NUCTA SPECIALTY
PRODUCT**



OBTAINABLE FROM YOUR USUAL
WHOLESALE

Manufactured by:

STEWART, GOODALL & DUNLOP LTD., 121a PRINCES STREET, EDINBURGH

THE CHEMOTHERAPY OF TUBERCULOSIS

Following several years of intensive research in the Roche laboratories, 'Rimifon,' isonicotinyl hydrazine, was discovered to be an active antitubercular compound.

The pharmacology of the isonicotinyl hydrazine derivatives has been described (Amer. Rev. Tuberc., 1952, 65, 376), and their activity in experimental tuberculosis ascertained (Bull. Sea View Hosp., 1952, 13, 3).

The favourable results obtained in the treatment of pulmonary tuberculosis have been reported in the same journals and in Diseases of the Chest, 1952, 21, 385.

Dosage of 'Rimifon' was begun at 2 mg./kg. and later increased to 4 mg./kg., i.e., from one to two tablets three times daily for an average adult.

'RIMIFON' IS ISSUED IN TABLETS OF 50 MG.
PACKINGS OF 100 AND 1,000.

'RIMIFON' ROCHE



ROCHE PRODUCTS LIMITED. Welwyn Garden City, Herts.

*A new
Ingram's teat
for 8^d*



This new teat in finest rubber, combines all the famous Ingram safety features. It will withstand repeated sterilization in boiling water and is **TESTED FOR FLOW**. Available in four distinct shapes, individually packed in attractive display cartons, these new teats deserve the most prominent display.

An intensive publicity campaign is now in full swing. Bold, telling advertisements in the leading women's journals, reaching hundreds of thousands of potential customers mean big business for all stockists. Tie in with this forceful advertising by displaying Ingram's Teats in your window and on your counter... but be sure your stocks are adequate!



ENSURES *safe* FEEDING

REDUCED PRICES

SYLVIA SANITARY TOWELS

	RETAIL Per Packet	TRADE Prices - Dozen
SIZE 0	2/-	18/1
" 1	2/3	20/3
" 2	2/8	23/5
" 3	3/4	27/4

ALTEX SANITARY TOWELS

	RETAIL Per Packet	TRADE Prices - Dozen
SIZE 1		
Packets of 6	11d.	8/6
Packets of 12	1/10	16/6

SOLVEX SOLUBLE SANITARY TOWELS

	RETAIL Per Packet	TRADE Prices - Dozen
SIZE 1		
Packets of 6	1/-	9/2
Packets of 12	2/-	18/3

PRODUCTS OF

Cuxson Gerrard
& Co. Ltd.
OLDBURY BIRMINGHAM
TELEPHONE: BROADWELL 1355 (4 LINES)

FOR CHEMISTS



DRUGS

SUNDRIES

Manufacturing Chemists

**PILLS • TABLETS
PROPRIETARIES**

HEAD OFFICE & WORKS: MANSFIELD ROAD, DERBY. Tel: 48266 (4 lines)
BRANCH WAREHOUSE: GROSVENOR ST., ASHTON under LYNE. Tel: 2816 (3 lines)

Keep them skipping fit Mother!

EDME
"Autumn Sun"
EXTRACT OF MALT
WITH COD LIVER OIL
The finest protection for chills and ills

Have you seen

THIS

new beautifully designed
showcard size 23" x 17½" in
full colours?

With the two side panels 17" x 10½"
each also supplied, the whole makes
an attractive window display that
compels attention, and creates sales.

THE COMPLETE SET IS FREE. Ask
our representative, or write to us
for your FREE set.

EDME "AUTUMN SUN" is the
Malt and Oil with the "taking
flavour."

For prices and further particulars write to:—

EDME LIMITED
84-86 REGENT ST., LONDON, W.1
Phone: Regent 5563-4

Dearborn

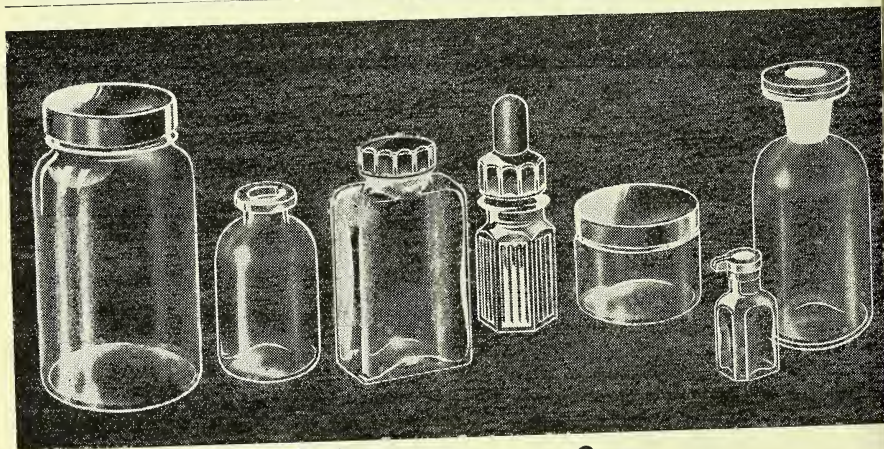
PREPARATIONS

MERCOLIZED WAX—*for nightly skin care*
MERCOLIZED FOUNDATION CREAM
MERCOLIZED ASTRINGENT LOTION
STALLAX — *the family shampoo*
SIPOLITE — *a powder depilatory*
PILENTA SOAP — *for the complexion*

Supplies obtainable from our distributors:

POTTER & MOORE LIMITED

Lavender House, Seymour
Road, Leyton, London, E.10



Glastics Ltd

4 MUSEUM HOUSE, MUSEUM STREET, LONDON, W.C.1
 Telephone: MUSEUM 9876 Telegrams: GLASPAS, WESTCENT, LONDON
Manufacturers of Glass Containers
 EXPORT AND WHOLESALE

CARNEGIE

Manufacturing Chemists

'CARNEBROS BRAND'

AESCULIN	HYOSCINE HYDROBROMIDE
ALOIN	IODIDES
AMIDOPYRIN	KHELLIN
ATROPINE & SALTS	LITHIUM SALTS
BARBITURATES	P.A.S.
BISMUTH SALTS	PHENAZONE
BROMISOVALERYLUREA	PODOPHYLLIN RESIN
CAFFEINE & SALTS	QUININE & SALTS
CHLORAL HYDRATE	SALICYLATES
CHRYSAROBIN	SANTONIN
CITRATES	STRYCHNINE & SALTS
EPHEDRINE & SALTS	THEOBROMINE & SALTS
ESERINE & SALTS	THEOPHYLLINE & SALTS
ETC.	

CARNEGIE BROTHERS (1949) LTD

WELWYN GARDEN CITY : HERTFORDSHIRE : ENGLAND

TELEGRAMS : 'CARNEBROS' WELWYN GARDEN TELEPHONE : WELWYN GARDEN 506 (4 lines)

A 'CARNEGIES OF WELWYN' COMPANY

Always remember the name

Certor

when you order corks. They are of good texture, and uniform in size.

IT SAVES TIME AND TROUBLE in your dispensing when you use corks which can be relied upon — corks uniform in size and of dependable quality.

That is why so many chemists are using Certor Corks and why you should use them, too. Millions of Certor Corks are used in the course of a year — a tribute to their quality and consistency.

They are available in two grades — Standard and Best.

PRICES

No.	Oz.	Standard Gross	Best Gross
3	1	1/11 5-grs. bags	3/- 3-grs bags
4	2-4	2/2 „	3/6 „
5	4-6	2/6 „	3/9 „
6	6-8	2/11 „	4/- „
7	8-10	3/4 „	4/6 „
8	12	3/10 3-grs. bags	5/- „
9	16	4/6 „	6/- „
10	20	4/11 „	7/- „

Always specify

Certor

CORKS

Goods carriage paid in free packages

MACDONALD & SON LTD., HOPE MILLS, POLLARD STREET, MANCHESTER



Ransom's Chlorophyll is produced from plants grown on the Company's own farms. It owes its high quality to the extreme care of its manufacture. Ransoms are the original manufacturers of Chlorophyll in this country.

Quality is born of Experience

The finest vegetable drugs and galenicals come only from the finest plants. Cultivation of medicinal plants is an art that comes only from long experience. It is because Ransoms of Hitchin have specialised in drug growing for over a century that the name Ransom has become synonymous with unsurpassed quality in drugs and galenicals all over the world.

Actual growers of belladonna, henbane, foxglove, aconite, chamomile, peppermint and lavender

Established 1846



WILLIAM RANSOM & SON LTD.
Hitchin Hertfordshire England

Potter's

NEW

sales plans

Every chemist in the country should be receiving during the next few days the Campaign Folder ★ in which Potter & Clarke Ltd. outline their new Sales Policy. This may briefly be summarised as follows:

1

Certain lines are being discontinued.

This means that sales promotion is concentrated on

A good round dozen good sound sellers:

1. Thompson's Slippery Elm Food Malted, Unmalted and Wholemeal.
2. Potter's Catarrh Pastilles—in handy tins.
3. Potter's Asthma Remedy—with new pyramid dispenser in every tin.
4. Potter's Asthma Smoking Mixture.
5. Potter's Asthma Cigarettes.
6. Haddit Insecticide Spray—Bottles, 2 sizes.

7. Haddit Insecticide Powder—Canisters, 2 sizes.
8. Thompson's Dandelion Coffee—for dyspeptics and indigestion. Also *Dandelion Coffee Essence*.
9. Chameleon Oil (Veterinary)—Localiser and liniment for animals.
10. Chameleon Oil (for Human use) The perfect liniment.
11. Antexema (Liquid)—for many forms of skin trouble.
12. Antexema Granules—for the blood, sugar coated.

★ This Campaign Folder gives detailed plans. Additional copies on request.



2

These POTTER'S lines are now obtainable only through WHOLESALE

3

SENSATIONAL BIG-SPACE NATIONAL ADVERTISING

opens in September

centred around these
two products

On Friday, September 19th, the "Daily Mail" will carry a Potter's Catarrh Pastille display in its largest advertising space (15½" deep across 6 columns). This "big splash" marks the start of carefully-planned advertising campaigns which focus public attention on Potter's Catarrh Pastilles and Potter's Asthma Remedy. In daily and weekly newspapers and magazines, the advertising pressure for these good-sellers will be kept up. Week after week.

Stepping up the advertising like this will undoubtedly mean that you can expect more and more Potter's customers. And, to round off what is being done in the press, new attractive sales-aids will be ready for counter and window display.



PLEASE NOTE NEW ADDRESS

POTTER & CLARKE LTD

RIVER ROAD · BARKING · ESSEX

Telephone: RIPPleway 3041

CALCIUM GLUCONATE
CITRIC ACID
CREAM OF TARTAR
ITACONIC ACID
ROCHELLE SALTS
TARTARIC ACID
LITHIUM SALTS

•

Est. 1870

Kemball, Bishop
& Company Limited

Crown Chemical Works, Three Mill Lane, Bromley-by-Bow, London, E.3.
Telegraphic Address: KEMBALL, LONDON • Telephone: ADVANCE 1234 (7 LINES)



...THE MAN WHO WOULDN'T BELIEVE A THING

Nice sort of chap, this customer of mine, but someone must have sold him a dud rattle in his cradle.

He 'knew' Corvette wasn't any good. I told him I'd tried it myself and liked it —that other customers were enthusiastic about its quality. He knew that was just sales talk. He'd heard it all before...

Try it, I told him a bit stiffly. And give him his due—he did. Back he came in a few days whistling a vastly different tune. Corvette was good... refreshingly good... better than anything he'd tried before. He took off his hat to Goya's men's division. From then on, he said he'd buy the stuff. And oddly enough *I believe him.*

There's *more* profit in *Corvette*

ette is an exceptionally good profit-making line for the ist. The shaving bowl earns you a profit of 1/6d, the refill and all other products in the range yield not less than 10d.

ING STICK 3/- • SHAVING BOWL 5/6 • LATHER SHAVING CREAM 3/- • BRUSHLESS
ING CREAM 3/- • HAIR CREAM 3/6 • BRILLIANTINE 4/- • SOLID BRILLIANTINE 3/6
TALCUM POWDER 4/6 • AFTER SHAVE LOTION 4/-

Corvette

a new range of matched
toilet preparations by Goya (MEN'S DIVISION)



FOR HOME & EXPORT

IODIDES
GLYCEROPHOSPHATES
SULPHA DRUGS
and ANTIBIOTICS



★ We can
supply these
and many other
drugs advantageously.

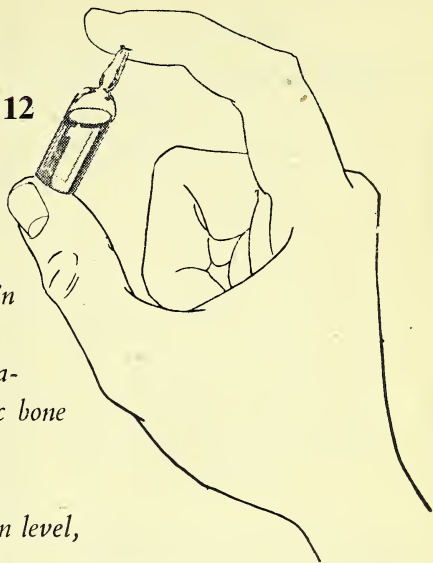
M·W·HARDY
AND COMPANY
(OVERSEAS) LTD

PINNERS HALL·GT WINCHESTER ST·LONDON·EC.2

TELEPHONE: LONDON WALL 7131

'DISTIVIT' B₁₂

brand

solution of vitamin B₁₂

'Distivit' B₁₂ is highly effective in the treatment of pernicious anæmia, including the neurological complications of the disease. Megaloblastic bone marrow becomes normoblastic, there is a rapid increase in the red cell count and hæmoglobin level, and clinical symptoms disappear.

'Distivit' B₁₂ is also useful in the treatment of other types of macrocytic anæmia.

There are no known contra-indications to its use and there is no evidence that it gives rise to undesirable side-effects.

'Distivit' B₁₂ is issued in three strengths in ampoules containing 20, 50, and 100 micrograms per ml. in boxes of 5 x 1 ml. ampoules.

Distributed by

BURROUGHS WELLCOME & CO.

EVANS MEDICAL SUPPLIES LTD.

IMPERIAL CHEMICAL (PHARMACEUTICALS) LTD.



Manufactured by

THE DISTILLERS COMPANY
(BIOCHEMICALS) LIMITED

SPEKE

LIVERPOOL

★ 'DISTIVIT', a trade mark, is the property of the manufacturers

EDINBURGH**HERIOT-WATT COLLEGE**

(Incorporating the Royal Public Dispensary School of Pharmacy)

DEPARTMENT OF PHARMACY*Principal of College :*Hugh B. Nisbet, Ph.D., D.Sc., F.R.I.C.,
F.R.S.E.*Head of Department :*H. H. CAMPBELL, A.H.-W.C., B.Sc., Ph.C.
F.R.I.C.**Intermediate Examination.****Pharmaceutical Chemist
Qualifying Examination.****Associateship of the Heriot-
Watt College in Applied
Pharmacy.**

Courses of lectures combined with laboratory and tutorial instruction are provided in the subjects of the examinations. The session extends from October to June.

Prospectus free on application.**CITY OF PLYMOUTH EDUCATION COMMITTEE
PLYMOUTH AND DEVONPORT TECHNICAL COLLEGE
SCHOOL OF PHARMACY***Head of Department :* V. SMITH, M.Sc., F.R.I.C., Ph.C.**The next Session commences
on SEPTEMBER 15th, 1952**

Applications are now being received for the following
courses of study:—

**FULL TIME COURSES FOR THE INTERMEDIATE & FINAL
EXAMINATIONS OF THE PHARMACEUTICAL SOCIETY
EXAMINATION OF THE SOCIETY
OF APOTHECARIES OF LONDON**

Full particulars may be obtained from the Principal, or from
ANDREW SCOTLAND, Director of Education.

DUNDEE TECHNICAL COLLEGE*Principal :* John R. Whittaker,
M.Sc., Ph.D., M.I.Mech.E., M.I.C.E.**SCHOOL OF PHARMACY**
Season 1952-53*Head of Dept. :* H. A. Perkin, B.Pharm., Ph.C.

Courses in preparation for the Intermediate and Qualifying
Examinations of the Pharmaceutical Society, and for the
Intermediate Examinations for B.Pharm. (London) degree,
will commence as follows:—

Intermediate Courses ... Mon., Sept. 22nd
Pharmaceutical Chemist Qualifying ... Mon., Sept. 29th
Further particulars and forms of application from *The Clerk
and Treasurer, Dundee Institute of Technology, Bell Street,
Dundee.*

**NORTHERN POLYTECHNIC
HOLLOWAY, LONDON, N.7**

Recognised Day courses for the PHARMACEUTICAL and 1st Medical Examinations. Evening courses for the Intermediate B.PHARM. and 1st Medical Examinations. Day and Evening Courses in CHEMISTRY, PHYSICS, MATHEMATICS, GEOLOGY, BOTANY and ZOOLOGY for Internal and External DEGREE EXAMINATIONS of the University of London. Evening Classes for subjects of the General Certificate of Education.

NEW SESSION BEGINS 22nd September, 1952**Prospectus free on application. Tel : NORTH 1686****HARRIS INSTITUTE, PRESTON**

The Institute is recognised by the Pharmaceutical Society for instruction in the subjects of the INTERMEDIATE EXAMINATION in:—

CHEMISTRY, PHYSICS AND BIOLOGY,
and also for A.R.I.C., A.Inst. P., and Degree.

The SESSION starts SEPTEMBER 15th, 1952. Further particulars may be obtained from the Principal:

Technical College, Corporation Street, PRESTON.**CITY OF CARDIFF EDUCATION COMMITTEE
COLLEGE OF TECHNOLOGY & COMMERCE***Principal :* A. Harvey, Ph.D., B.Sc., F.Inst.P.**THE WELSH COLLEGE OF PHARMACY**

The College, in association with the Welsh National School of Medicine, is an internal teaching department of the University of Wales.

Head of the Welsh College of Pharmacy :
R. Vernon Lloyd, B. Pharm. (Lond) Ph.C.

SESSION 1952-53

The courses of instruction in the Welsh College of Pharmacy are designed primarily for qualifying in Pharmacy through the internal degree of B. Pharm. of the University of Wales, but provision may also be made for students wishing to read for the qualifying examinations of the Pharmaceutical Society.

Further details are given in the prospectus of the Welsh College of Pharmacy.

Education Office,
City Hall, Cardiff.

Robert E. Presswood,
Director of Education.

SCHOOL OF PHARMACY, UNIVERSITY OF LONDON.

17 BLOOMSBURY SQUARE, LONDON, W.C.1.

Tel : No : HOLborn 7456

DEAN :

Professor H. Berry, B.Sc., F.R.I.C., Ph.C., Dip. Bact. (Lond.).

SECRETARY :

S. R. Curtis, B.A., A.C.A.

SENIOR STAFF :

PHARMACEUTICAL CHEMISTRY Professor W. H. Linnell, D.Sc., Ph.D., F.R.I.C., Ph.C.
L. Saunders, B.Sc., Ph.D., F.R.I.C.
L. K. Sharp, B.Sc., Ph.D., F.R.I.C., Ph.C.

PHARMACEUTICS Professor H. Berry, B.Sc., F.R.I.C., Ph.C., Dip. Bact. (Lond.).
E. Shotton, B.Sc. F.R.I.C., Ph.C.
A. M. Cook, B.Pharm., Ph.D., A.R.I.C., Ph.C.
D. Train, M.C., B.Sc. (Eng.), B.Pharm., A.R.I.C., Ph.C.

PHARMACOGNOSY J. W. Fairbairn, B.Sc., Ph.D., A.R.I.C., Ph.C., F.L.S.

PHARMACOLOGY G. A. H. Buttle, O.B.E., M.A., M.R.C.S., L.R.C.P., (Wellcome Professor).
G. F. Somers, B.Sc., Ph.D., Ph.C.
Eleanor J. Zaimis, M.D., B.Sc.

Courses of training for the B.Pharm. (Honours) Degree of the University of London, and facilities for post-graduate work in all subjects of the degree, are provided.

Particulars may be obtained on application to the Secretary.



BAILLIÈRE

PHYSIOLOGY & PHARMACOLOGY

FOR PHARMACEUTICAL STUDENTS

Harold H. Barber, B.Sc., Ph.D., F.R.I.C.

Third Edition, completely revised and brought up to date, and covering the requirements in physiology and pharmacology for degrees and diplomas in pharmacy. Appropriate laboratory exercises are given at the end of each chapter. Pp. viii + 662, with 185 illus. **25s.** Postage 1s. 3d.

BENTLEY'S

TEXTBOOK OF PHARMACEUTICS

Edited by H. Davis, B.Sc., Ph.D., Ph.C., F.R.I.C. Fifth Edition. Pp. xii + 1096, with 307 illus. **30s.** Postage 1s. 6d.

TREASE :

TEXTBOOK OF PHARMACOGNOSY

G. E. Trease, B.Pharm., Ph.C., F.R.I.C., F.L.S. Fifth Edition. Pp. viii + 812, with 274 illus. **30s.** Postage 1s. 6d.

TEXTBOOKS

BIOLOGY

FOR PHARMACEUTICAL STUDENTS

S. Mangham, M.A., and A. Hockley, B.Sc. Second Edition, revised and expanded to meet the requirements of the latest syllabus of the Pharmaceutical Society's Intermediate Examination. The results of recent researches have been incorporated and some sections have been completely rewritten. Pp. viii + 634, with 322 illus. **30s.** Postage 1s. 3d.

From the Students' Aids Series

AIDS TO

PHARMACEUTICAL CHEMISTRY

W. A. Muteham, M.P.S. Lond. Pp. viii + 347, with detailed formulæ and tests. **7s. 6d.** Postage 6d.

AIDS TO

PHARMACEUTICAL CALCULATIONS

Mary E. Bolton, B.Pharm., Ph.C. Pp. viii + 96, with exercises and tables. **6s.** Postage 6d.

BAILLIÈRE, TINDALL AND COX LTD.

7-8 Henrietta Street, London, W.C.2

BRIGHTON TECHNICAL COLLEGE

Principal: GORDON E. WATTS, M.A., Ph.D., B.Sc., F.R.I.C.

SCHOOL OF PHARMACY

Officially approved by the Pharmaceutical Society and the University of London.

Head of School: HENRY B. MACKIE, B.Pharm.(Lond.), Ph.C.

Session commences TUESDAY, 23RD SEPTEMBER, 1952.

The following Full-time Day Courses are offered:—

INTERMEDIATE; PHARMACEUTICAL CHEMIST QUALIFYING; DEGREE IN PHARMACY (B. PHARM.) UNIVERSITY OF LONDON.

A very high record of examination successes, modern equipment, excellent conditions of work and ample social and athletic activities characterise the School.

Student demonstratorships are offered to suitable students who desire to continue their studies after graduation.

For Prospectus apply to THE REGISTRAR, TECHNICAL COLLEGE, BRIGHTON.

THE WORLD'S GREATEST BOOKSHOP

FOYLES

• FOR BOOKS •

All new Books available on day of publication.
Secondhand and rare Books on every subject.

*Subscriptions taken for British, American
and Continental magazines.*

119-125 CHARING CROSS ROAD, LONDON, W.C.2

Gerrard 5660 (16 lines) ★ Open 9-6 (Thur. 9-7)

Two minutes from Tottenham Court Rd., Station

Bristol Education Committee

THE COLLEGE OF TECHNOLOGY

Principal: F. W. Partington, M.Sc., A.M.I.Mech.E.

BRISTOL SCHOOL OF PHARMACY

Head: W. Cooper, Ph.C.

Full time courses are offered for the following:—

The Pharmaceutical Chemist Qualifying and
Intermediate Examinations in Pharmacy.

NEXT SESSION OPENS

THURSDAY, 18th. SEPT., 1952

Full particulars from The Head of the Department

DICTIONARY OF SYNONYMS

For the pharmacist and his staff. Contains
over 7,000 synonymous terms. 5/4 Post Free

THE CHEMIST & DRUGGIST,
28 Essex Street, London, W.C.2

HUDDERSFIELD TECHNICAL COLLEGE

Departments of Chemistry, Colour Chemistry
and Dyeing; Textile Industries; Civil and Mech-
anical Engineering; Electrical Engineering; Build-
ing; Mathematics; Physics; Biology; Art;
Humanistics; Music; Commerce; Domestic Science.
COURSES FOR INTERMEDIATE PHARMACY STUDENTS IN
CHEMISTRY, PHYSICS, BOTANY and ZOOLOGY.

Prospectus and other particulars on application to the Registrar.

ROTHERHAM TECHNICAL COLLEGE

Acting Principal: M. B. THOMPSON, A.R.S.M., B.Sc. (Eng.) (Met.) (Hons.), Ph.D., F.S.M., M.Inst.M.

The College provides a full-time day course in preparation for the intermediate Examination of the Pharmaceutical Society. Intending students should register as soon as possible.

Particulars of fees and conditions of admission to the Course may be obtained from the College.

Opening date of the Course, 22nd September 1952

R. Bloomer, Director of Education, Education Offices, Rotherham.

BRADFORD EDUCATION COMMITTEE

Bradford Technical College

DEPARTMENT OF PHARMACY

Courses for

Intermediate Examination (Pharmaceutical Society)

Pharmaceutical Chemist Qualifying Examination

Bachelor of Pharmacy (University of London)

Apply to the **PRINCIPAL, TECHNICAL COLLEGE, BRADFORD**, for
particulars regarding these courses of study.

OXFORD MEDICAL PUBLICATIONS

THE CLINICAL APPLICATION OF ANTIBIOTICS—PENICILLIN

by M. E. FLOREY, M.D.

From the Sir William Dunn School of Pathology, Oxford

This work, although complete in itself, is the logical successor of the two-volume monograph *Antibiotics*, published in December, 1949. The latter dealt with every aspect except the clinical—an attempt to include this would not only have made for delay in production (with its attendant disadvantages of exclusion of the most recent advances) but would have gone beyond the needs of the large number of readers whose interests were confined to the chemical and pharmacological aspects. It should nevertheless be pointed out that although the parent monograph is, like the present volume, entirely self-contained, only the possession of the whole (including a volume yet to be published on the clinical uses of antibiotics other than penicillin) can provide a complete account of every branch of what may virtually be termed a new science.

744 pages.

222 illustrations.

98 tables.

84s. net.

OXFORD UNIVERSITY PRESS

PORTSMOUTH MUNICIPAL COLLEGE Pharmacy and Physiology Department

Head of Department: E. Thorpe, B.Sc., B.Pharm., Ph.C.

Classes for :—

Intermediate and C.C.E. (Advanced Level).
Pharmaceutical Chemist Qualifying Examination.
Bachelor of Pharmacy of University of London.
Bachelor of Science in Physiology (Inter and Final).
Research facilities are available.
Post-graduate and refresher courses.

Session commences September 16th, 1952.

Application forms and full particulars may be obtained from the Registrar, Municipal College, Portsmouth.

WOLVERHAMPTON & STAFFORDSHIRE TECHNICAL COLLEGE

WULFRUNA STREET, WOLVERHAMPTON

Telephone: Wolverhampton 24888

A nine months' full-time course for the Intermediate Examination will commence on September 15th, 1952. Modern equipment and expert full-time staff

Certain scholarships available.

The South Staffordshire Centre approved for this Examination by the Pharmaceutical Society.

For details of course and fees see Prospectus available on application to the Principal.

LATIN FOR PHARMACEUTICAL STUDENTS

Fifth edition 1950. (J. W. Cooper and A. C. MacLaren)

This revised and up-to-date edition provides a concise six months course of Latin for Students of Pharmacy and Medicine. Following publication of the B.P. 1948, numerous additions and alterations in official nomenclature have been introduced. The book comprises 11 lessons—each representing one fortnight's work and is complete with Latin-English and English-Latin vocabularies arranged for quick and easy reference. A copy will be sent by return of post if you send remittance value 9/- to

The Publisher,

The CHEMIST and DRUGGIST
28 Essex Street, Strand, London W.C.2

THE TECHNICAL COLLEGE OF MONMOUTHSHIRE CRUMLIN

Principal—Dr. T. V. STARKEY, F.Inst.P.)

INTERMEDIATE EXAMINATION OF THE PHARMACEUTICAL SOCIETY

Full-time courses in preparation for the above examination will recommence on Thursday, 11th September, 1952. Students wishing to take these courses are strongly advised to enrol without delay. Forms can be obtained on application to the Registrar at the College,

C. E. GITTINS, M.A.
Director of Education

At last! a travel sickness remedy for children

- ★ Containing no scheduled poisons; adequate dosage may be administered without uneasiness.
- ★ A liquid preparation convenient and easy to take at all times.
- ★ It's bound to be in steady demand throughout the year.
- ★ Backed by a name the public trusts.



BONUS TERMS!

13 for every
doz. on orders
of 3 doz. and
over.

Retail 2/- ea.
Trade 11/6
a doz. plus tax
—order now—
colourful display
cards
supplied.

Bromodal



JOHN BELL, HILLS & LUCAS LTD.,
Oxford Works, Worsley Bridge Road, London, S.E.26



In daily demand

The steady counter-sales of 'Tabloid' Laxative Vegetable are in themselves a striking tribute to its qualities. Over the years, demand has been created by professional and personal recommendation alone. You, as a pharmacist, will need no reminder that this is a product you can sell with confidence. Gentle and effective, it *safely* gives assistance to nature when required. Show material is available. The bonus terms continue. Bottles of 25 'Tabloid' Laxative Vegetable retail at 1/4 plus 4d. purchase tax; bottles of 100 at 3/9 plus 11½d. purchase tax.

'TABLOID' BRAND

Laxative Vegetable
(SUGAR-COATED)



BURROUGHS WELLCOME & CO. (The Wellcome Foundation Ltd.) LONDON

Within a matter of SECONDS

PRIVINE

produces
NASAL DECONGESTION
lasting **SEVERAL HOURS**

The new **POCKET NEBULISER** ensures
Effectiveness • Economy
Ease of Administration

Please apply for a sample nebuliser

Nebuliser 1 : 2000—1 : 1000. Also in bottles of $\frac{1}{2}$, 4 and 20 fl. ozs.

CIBA

'Privine' is a registered trade mark
Reg. user

CIBA LABORATORIES LIMITED
HORSHAM • SUSSEX

Telephone: Horsham 1234

Telegrams: Cibalabs, Horsham

ISONIAZID

(Isonicotinic Acid Hydrazide).

The new anti-tubercular drug Isonicotinic Acid Hydrazide is already supplied under several different proprietary names. Accordingly, to avoid further confusion, we have decided to market this drug under its recommended non-proprietary name—Isoniazid.

We can now supply Isoniazid in the form of 50 mgm. tablets as follows:-

100 tablets	15/-
500 tablets	70/-
1,000 tablets	120/-

The above retail prices are subject to Purchase Tax and our usual discounts.

P.A.S. SODIUM 1.5gm. CACHETS

Reduced Prices

As from 1st August, 1952, the retail prices of our 500 pack of P.A.S. Sodium 1.5gm. cachets will be reduced to the following:—

500 cachets	120/-
-------------	--------	-------

The retail price of the 100 pack remains unchanged at 30/-

WARD, BLENKINSOP & CO. LTD.

6 HENRIETTA PLACE, LONDON, W.1
LANGHAM 3185 DUOCHEM, WESDO, LONDON



Is Chlorophyll on your research programme?

CHLOROPHYLL may not be "Green Gold", but executives responsible for research should be conscious of the many potential uses.

A vast amount of scattered research has been carried out in connection with the position of CHLOROPHYLL in medicine. As far back as 1851 Verdeil (a) noted the connection between CHLOROPHYLL and Hæmoglobins. After the first world war Burgi (b) demonstrated its properties in the stimulation of tissues; and in the United States work has been done to demonstrate the effectiveness of CHLOROPHYLL in ointment for healing wounds. Westcott (c) discovered the deodorising properties of chlorophyllins taken internally and his conclusions were borne out by Dijkstra (d) in Holland. In the dental

field CHLOROPHYLL has been incorporated in oral cleansing preparations and shown to be efficacious in inhibiting dental diseases.

These facts will indicate many possible lines of research and we would be pleased to supply samples of any of our products for this purpose, and to put your chemists in touch with available references.

REFERENCES:

- (a) F. VERDEIL, Compt. rend, 1851. 33, 689.
- (b) E. BURGI, Das Chlorophyll als Pharmakon. Leipzig 1932.
- (c) F. H. WESTCOTT, N.Y. State J. Med. 1950. 50. 689.
- (d) B. K. S. DIJKSTRA, Deodorising effects of Chlorophyll

Available in Oil Soluble paste, suitable for colouring soap etc. Also in Water Soluble pastes and powders. Purity assayed by the Spectrophotometric method evolved by the British Chlorophyll Company. Full details available on request.



FREDK. BOEHM LIMITED · 19 BENTINCK STREET, LONDON, W1 · TELEPHONE WELBECK 795

*Established
for over
a century*

TELEPHONE :
NORTH 1076 & 2074

TELEGRAMS :
GELATINATE, LONDON

John Tye & Son Ltd.
MANUFACTURING CHEMISTS
457 CALEDONIAN ROAD
LONDON, N.7

*for
all standard
and special formulæ of
gelatine capsules, vitrellii in-
jectable ampoules, pills, tablets*

JKL

AGAR-AGAR
BALSAM TOLU ORIGINAL IMPORT
GRINDELIA HERB
HYDRASTIS ROOT
LOBELIA HERB
PAPAIN
SABADILLA SEED
SQUILLS-WHITE CUT
WITCH HAZEL LEAVES
WITCH HAZEL BARK
and all other

**Botanicals, Gums, Waxes,
Essential Oils and Spices**

JOHN KELLYS (LONDON) LTD.

Gresham House, 24 OLD BROAD STREET, E.C.2

Telephone: London Wall 4882, 6585, 6586

Telegrams: "Ergotine, Stock, London"

Branches in New York and Hamburg

Evans, Gadd & Co. Exeter

MANUFACTURING CHEMISTS

**Drugs, Galenicals, Packed Goods and Sundries
for the Pharmaceutical Trade**

Wholesale Distributors of Ethical Specialities and Proprietary Medicines

Regular van deliveries cover the West of England

Return of post service for urgent items

EVANS, GADD & CO., LTD., EXETER

ESTABLISHED 1790

Telephone: Exeter 2278 (3 lines)

Telegrams: Gadd, Exeter



Since 1913, when the Mysore Department of Industries was instituted, the industrial development of Mysore has gone steadily ahead. Plans in hand to develop still further Mysore's vast resources will continue a record of progress that has earned for Mysore its proud title of "The model state of India." One of the most famous of its many products is sandalwood oil. Made in the Government sandalwood oil factory, strict supervision during every process guarantees a standard of purity and quality that is unequalled.

MYSORE

SANDALWOOD OIL

For further information apply to

TRADE AGENT FOR MYSORE

9 Clifford Street, London, W.1.

Tel : AMB 6671

Ammonium Carbonate
Chalk—Precipitated and Prepared
Cresylic Acid
Coal Tar Disinfectants
Emulsifiers
Magnesium Carbonate (Pond.)
Synthetic Detergents
Naphthaline
Toluene, Xylene
Zinc Oxide

DUNN BROTHERS'
SUCCRS. LTD.
1 BOOTH STREET, MANCHESTER
Established 75 years

TUNGLOSE
BRAND
PURE MEDICINAL
POWDERED GLUCOSE
(Dextrose Monohydrate)

Ask your Wholesaler



**TUNNEL GLUCOSE
REFINERIES LTD.**
329 High Holborn, London, W.C.1
Telephone : Chancery 6524 (6 lines)
Works : Tunnel Avenue. Greenwich

An Advance in Contraception



ANTEMIN—an entirely new contraceptive cream recently introduced—constitutes a notable advance in modern methods of family planning. Formulated in the light of extensive research, it affords all the qualities desirable in a contraceptive preparation.

- Spermicidal activity S/8.
- pH value approximating to normal vaginal secretion.
- Cosmetic-type cream base. Non-friable and tenacious.
- Non-irritant to vaginal mucosa. Non-toxic.
- Inexpensive. Simple in application.
- Approved by the Family Planning Association for use in conjunction with a mechanical barrier.

Antemin

Retail Price . 3/- per tube Trade Discount 33½%

Medical literature available to Pharmacists on request.

Manufactured by

COATES & COOPER LTD.

PYRAMID WORKS · WEST DRAYTON · MIDDX.





QUALITY AND SERVICE

for
**GALENICALS TABLETS
CAPSULES INJECTIONS
PENICILLIN PREPARATIONS**

DUNCAN, FLOCKHART & CO., LTD.

EDINBURGH & LONDON

In the balance

The dispenser knows how much depends upon scientific exactness—on complete assurance of purity and constant standards. All will ultimately be 'weighed in the balance'..... for he knows how faithfully he can rely on the products of H.E. Daniel Ltd., to enhance his reputation.

H·E·DANIEL LTD



MANUFACTURERS, DISTILLERS AND EXPORTERS OF:
ESSENTIAL OILS, FLAVOURING ESSENCES, PERFUME COMPOUNDS,
CRUDE DRUGS, BALSAMS, GUMS, SPICES, AROMATIC CHEMICALS,
FINE CHEMICALS AND MEDICINAL EXTRACTS.

ST BERNARD WORKS · STONEY LANE · UPPER NORWOOD · LONDON SE19
TELEPHONE LIVINGSTONE 7287 9 · TELEGRAMS 'HANSEDA' LONDON



GALE'S NUTRITIOUS TONIC**MORELIX**

(Regd.)

ESPECIALLY SUITABLE FOR
CHILDREN
AND DURING CONVALESCENCE

*Contains Liquid Malt,
Vitamins A & D, Hypophosphites
and Virginian Prune.*

DREADNOUGHT



BRAND

GALE, BAISS & CO. LTD.,
274/276, ILBERTON ROAD, S.E.15

PEBOC LTD
MANUFACTURERS OF
VITAMIN D3

*Enquiries
to*

SALES OFFICE.
629, TOWER BUILDING,
WATER STREET,
LIVERPOOL. 3.

LABORATORIES · GREENFORD · MIDDY

STANDARD SYNTHETICS LIMITED

*Actual distillers of Essential Oils
Manufacturers of Aromatics, Perfume
Bases and Flavours.*

*We specialise in Cinnamon Bark Oil,
Juniper Berry Oil, Winter-
green Oil, Eucalyptol,
French Lavender Oil, Ter-
peneless Lemon Oil, Rose
Perfumes, etc.*

76 Glenthams Rd., Barnes
London - - S.W.13

Telephone 1-Riverside 3616

We are direct importers of

**PINEOIL
TERPINEOL
TERPINOLENE
PROPYLENE GLYCOL
LANOLINE B.P.
LECITHIN**

Enquiries invited

FATOILS LIMITED

91-3 BISHOPSGATE, LONDON, E.C.2
Telephone London Wall 5047 (3 lines)

*for Pharmaceuticals & Fine
Chemicals*



**HALEWOOD
CHEMICALS LTD.**

111-115 EASTBOURNE MEWS, PADDINGTON, LONDON, W.2

U·M·P

SPECIALISED TUBES

with elongated nozzle for
Eye Ointments, Nasal
Ointments and Haemorrhoidal
Ointments; also
Sescot tubes with Hypo-
dermic needle attached.

*To fill Collapsible Tubes, please
ask for UMP Tube Filling Unit
Leaflet*

*Moulders of Plastics to the
Trade by injection and
compression methods*

TUBE WITH
APPLICATOR
MADE FROM
POLYETHYLENE
THE LATEST DEVELOPMENT
IN THE APPLICATION
OF HÆMORRHOIDAL
OINTMENTS

Immediate relief from
pain. The irritation is
soothed, the swelling
reduced, the bleeding
checked, and the affected
parts are strengthened
and healed

Manufactured by
J.B. CARTWRIGHT LTD.
RAWDON, LEEDS
ENGLAND

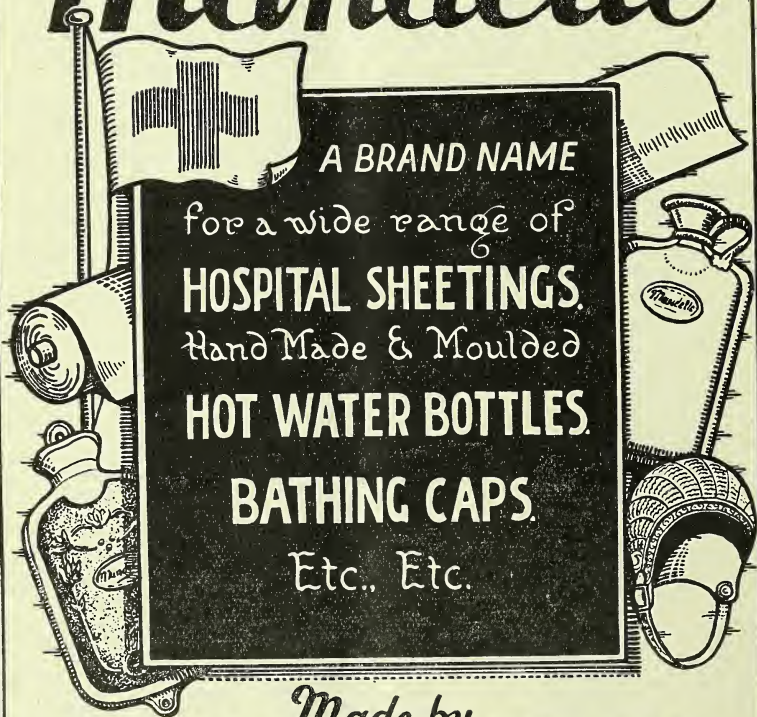


THE SIGN OF SERVICE
AND CO-OPERATION

UNIVERSAL METAL PRODUCTS LTD.

SALFORD 6 LANCs. Telephone: PENDLETON 1631-2-3
LONDON OFFICE: ARGYLE HOUSE, 29/31, EUSTON ROAD, N.W.1.

Mandelle



A BRAND NAME

for a wide range of
HOSPITAL SHEETINGS.

Hand Made & Moulded

HOT WATER BOTTLES.

BATHING CAPS.

Etc., Etc.

Made by
J. MANDLEBERG & Co. LTD.
PENDLETON, SALFORD, 6, LANCs.

NATIONAL

White Flint Glass Containers
of Quality



DISPENSING BOTTLES
1-oz.—20-oz.

TABLET BOTTLES
Nos. 1—7½ sizes

RIBBED OVALS
Cork Mouth or Screw

ROUND SCREW JARS
Tall and Semi-Squat

VIALS
½-oz.—3-oz.

PANELLED FLATS
1-oz.—4-oz.

BOW-FRONT PANELS
1-oz.—8-oz.

NATIONAL GLASS WORKS (YORK) LTD.
Fishergate, YORK 105 HATTON GARDEN, LONDON, E.C.2

WHOLESALE
ONLY.

N6/2A/17

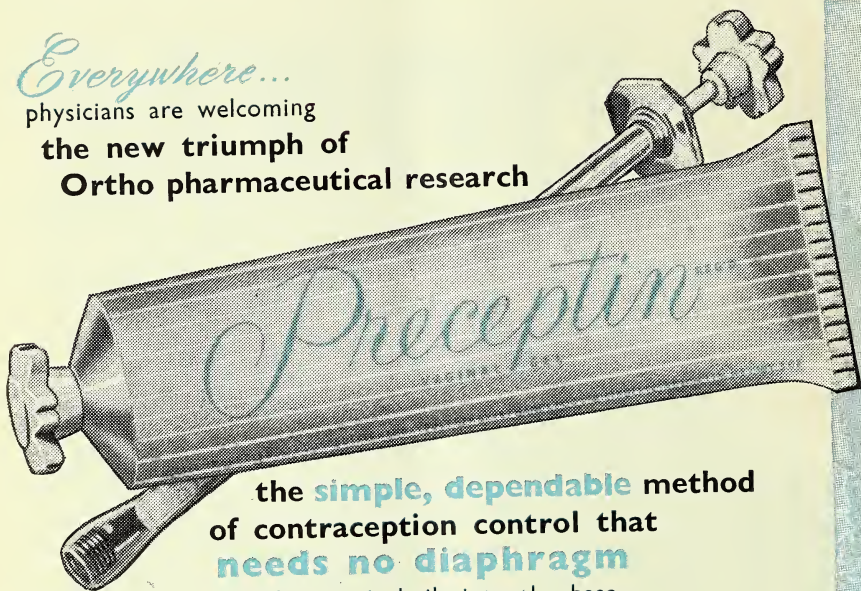


Everywhere...

physicians are welcoming

the new triumph of

Ortho pharmaceutical research



the simple, dependable method
of contraception control that
needs no diaphragm
the barrier is built into the base

To eliminate the diaphragm but retain its function, a physical barrier was incorporated into the Gel itself. The unique Preceptin base was achieved by blending recently developed, synthetic gel-forming agents to form a persistent, adherent physical barrier over the cervix. At the same time it serves as a vehicle for the superior spermicidal action of Preceptin.

- Preceptin** revolutionises contraception by a higher degree of complete effectiveness without the need for any secondary appliance.
- Preceptin** is simply applied by means of the Ortho measured-dose applicator.
- Preceptin** is proven effective by clinical studies over 2 years involving 3270 women of whom 99.2% received complete protection.
- Preceptin** is proven well tolerated. Prolonged use produces no local irritation. It employs no toxic materials.
- Preceptin** is more acceptable—no leakage, no excessive lubrication, no odour—a smooth snow-white Gel.
- Preceptin** is universally promoted by medical journal advertising, direct mail and the well-trained force of Ortho Professional Service Representatives.
- Preceptin** is available in large economy-size tubes as follows:—
- Preceptin** Package "A" (with Applicator) Retail Price 9/6
- Preceptin** Package "B" ("Refill" Tube only) Retail Price 7/-

Orders through your usual wholesaler please!

Ortho Pharmaceutical Limited
HIGH WYCOMBE • BUCKINGHAMSHIRE • ENGLAND



BARTLETT'S *AMAZING NEW VALUE IN* **METAL FRAME SUN GLASSES**

STYLE 401



Another new Bartlett style at a new, keener than ever price. Now ready for immediate delivery—wide vision, gilt or nickel frames

(shape illustrated only), [plastic earpieces, adjustable nose pads, Crookes Lenses. **Order now** through your usual wholesaler.

BARTLETT'S **SUN GLASSES**

NOTE NEW ADDRESS

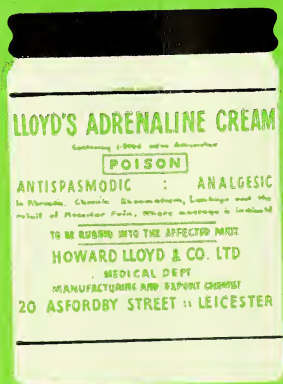
Alfred Franks and Bartlett Company Limited

226/8 GRAYS INN ROAD, LONDON, W.C.1

Telephone: TERminus 9865 (4 lines)

ALL WHOLESALE ENQUIRIES TO THIS ADDRESS, PLEASE

Check your stocks of Lloyd's Adrenaline Cream

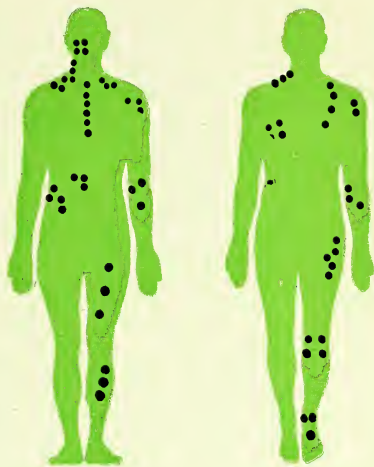


Be prepared for big sales and repeat orders

Comparative new-comer to chemists' shelves, Lloyd's Adrenaline Cream has already built for itself a large and loyal market. Chemists all over the country report that stocks go quickly and that repeat orders are almost 100%

How has this come about? Primarily, because Lloyd's Adrenaline Cream is a first-class product which completely fulfils its claims. It *does* relieve rheumatic pain, often in cases where all else has failed. Secondly, large-scale, sincere advertising daily tells *your* customers the wonderful story of Lloyd's Adrenaline Cream.

So take advantage of the growing popularity of this product, and stock up well with Lloyd's Adrenaline Cream.



LLOYD'S ADRENALINE CREAM

★ Repeat sales are nearly 100%—because users find real relief from Lloyd's Adrenaline Cream.

★ Large-scale, sincere advertising spreads the news, selling *your* customers on Lloyd's Adrenaline Cream.

★ More and more doctors and hospitals are using and recommending Lloyd's Adrenaline Cream.

★ The medical profession is kept constantly informed of latest clinical results through advertising in the leading medical papers.

★ Attractive display material sent free on application to us.

All enquiries and requests for display material to:

HOWARD LLOYD & CO. LTD.,

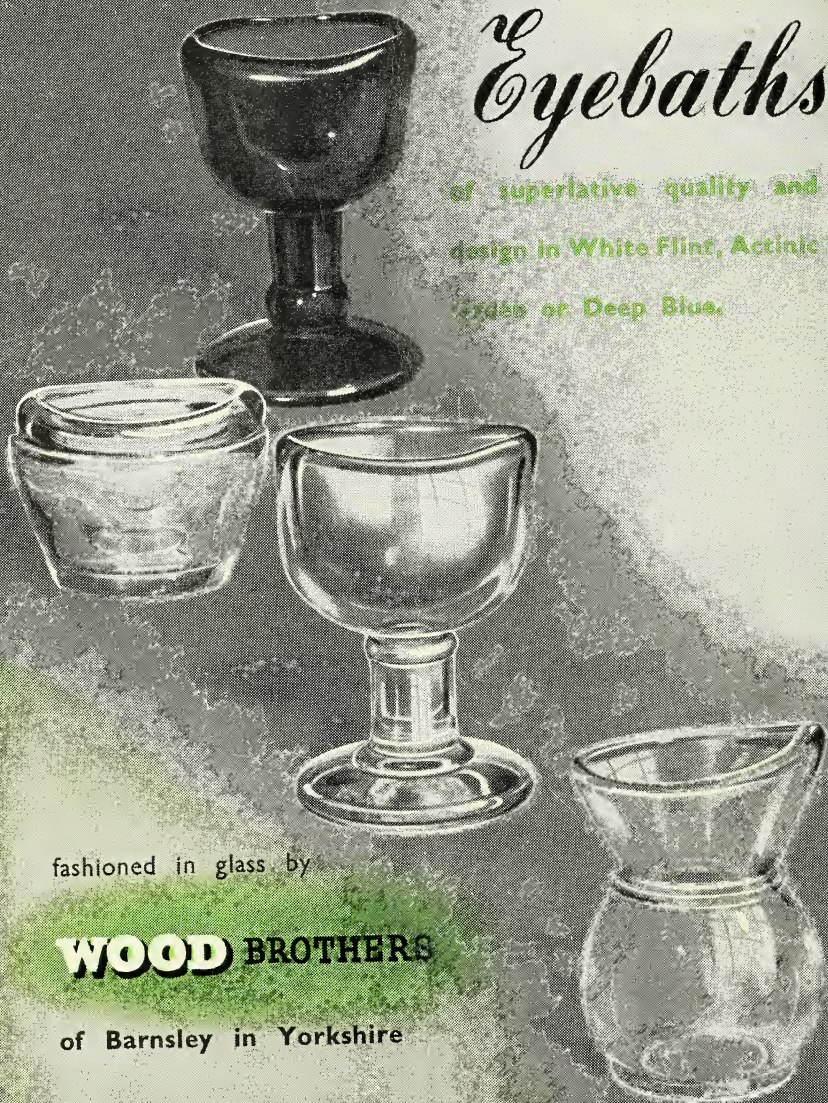
11 WATERLOO PLACE, LONDON, S.W.1.
AND LEICESTER

ORDER NOW FROM YOUR WHOLESALE

Retail prices: 5/- and 7/- a jar, and 3/- for the new handy size tube.

Eyebaths

of superlative quality and
design in White Flint, Actinic
Green or Deep Blue.



fashioned in glass by

WOOD BROTHERS

of Barnsley in Yorkshire

Makers of fine glassware since the year 1828

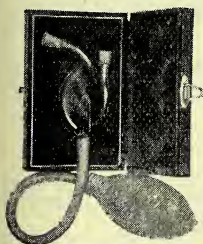
NHS

The following **RIDDELL Asthma Inhalers**
can be supplied on **E C 10** forms:—

• ASTHMATOR	14/6	Retail	8/9	Cost
• DRITAX	18/-	„	11/1	„
• RIDDOFAN (In Leatherette Case)	19/3	„	12/3	„
• POCKET RIDDOPAG	20/6	„	12/4	„
• RIDDOPAG (INC. MASK)	25/-	„	15/-	„

AND THE POPULAR—

RIDDOBRON **ASTHMA INHALANT** **12.5 gm.; 25 gm.; and 100 gm.**



RIDDELL PRODUCTS LIMITED

AXTELL HOUSE • WARWICK STREET



• **LONDON** • **W.1** •

P.A.T.A.

Telephone: GERard 3754 (3 lines)

"RELiance" SPONGES

*Products of
150 Years' Experience*



As the largest buyers of natural deep sea sponges, and with over 150 years' experience of processing, we bring to the chemist, sponges of the finest texture and processed to perfection.

Attractive display materials and interesting literature are at your disposal. Your enquiries will receive expert attention, and our representative will gladly call on request.

CHEMIST EXHIBITION

September 29th—October 2nd

STAND NO. 36

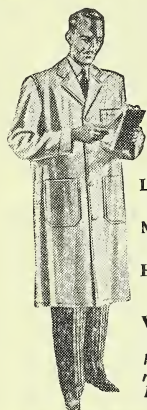
CRESSWELL BROS. SPONGES

(World Natural Sponge Suppliers Ltd.) SPONGE IMPORTERS & EXPORTERS

INTERNATIONAL BUILDING, BUCK STREET, CAMDEN TOWN, LONDON, N.W.1

Phone: GULLiver 5462-3 Telegrams: Sponge, Norwest, London





Overall Value

WHITE COATS

Light weight	34"—46"	.. 27/10
" "	48" & 50"	.. 34/-
Medium weight	34"—46"	.. 29/9
" "	48" & 50"	.. 36/6
Heavy weight	34"—46"	.. 32/11
" "	48" & 50"	.. 38/5

White Jackets 36" to 46" 23/9

For post orders please send chest measurements and 1/- extra for Postage and Packing. Prices subject to fluctuation.

GARDINER'S

1, 3 & 5 COMMERCIAL ROAD, LONDON, E.1
(Opposite Aldgate East Station)

Telephone: B1Shopsgate 6751/3

Gardiner & Co. (The Scotch House) Ltd.



Collapsible Tubes from Stock, in 1 gross lots and above, for Chemists and Laboratories who make their own creams and ointments.

Price list and samples upon request.

IMPAX WORKS (Mail Order Department)

Browells Lane, FELTHAM, Middx.

Telephone: Feltham 4211 (2 lines)

"RODINE" REGD
THE **RAPID RAT REMOVER**

Always in demand!

T. HARLEY LTD., PERTH, SCOTLAND



GLEDHILL

British Made Cash Registers and
Tills for every type of business

G. H. GLEDHILL & SONS
LIMITED
28, Trinity Works, HALIFAX

SURE-SELLING STOCK!
OVER 150 YEARS REPUTATION
KEARSLEY'S
THE ORIGINAL
WIDOW WELCH'S FEMALE PILLS
9d. BOX PROFIT by ordering 1 dozen
3/3½ size. Bonus given on every
dozen (13). It pays to push this size
C. & G. KEARSLEY LTD.
71 DARTMOUTH RD., LONDON, S.E.22
Established 1787 in the Reign of King George III

GUMS TRAGACANTH AND ACACIA
As Imported or Finely Powdered
ALL GRADES

HENRY MANSEY LTD., 21 LIME STREET, LONDON, E.C.4
Telephone: Mansion House 0920

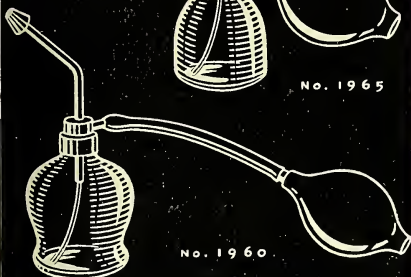
FRANCO-BRITISH GLASS CO. LTD.
For Ampoules & Vials.

15/17 KING STREET, ST. JAMES'S
LONDON, S.W.1
Telephone - - TRAfalgar 4181

ENTIRELY BRITISH MADE

**N.H.S.
PATTERNS**

No. 1965



No. 1960

REGISTERED

TRADE MARK



BRITISH

MADE

SAMCO Atomisers and Sprays differ from types in general use in that each model is a Scientific Instrument specially designed to handle all types of spraying compounds without the necessity to adjust the nozzle of the instrument in any way.

Each instrument is manufactured and assembled to mathematically exact limits thereby assuring uniform performance.

Materials of the finest quality only are used and all components in direct contact with fluids are made of pure nickel, which is impervious to every known substance used in medical prescriptions.

All components are heavily chromium plated.

All **SAMCO** models are pressure operated, thus ensuring complete atomisation.

WHOLESALE & EXPORT ONLY

ACTUAL MANUFACTURERS

PHONE: EUSTON 1757 & 551

S. MURRAY & Co. Ltd.

45 ST. PANCRAS WAY, LONDON, N.W.1

*Ever feel smug?*

There's no sweeter sound than one's own trumpet—except the cries of 'encore' from happy customers. To please your public...

CALL IN THE PACKAGING SPECIALISTS

**JOHNS, SON & WATTS
LIMITED**

ESTABLISHED 1842

2-4 Epworth Street, London, E.C.2

Telephone: MONarch 7408 (3 lines)

BARBITURATES

ALLOBARBITONE, BARBITONE, SODIUM BARBITONE, BUTO-BARBITONE, CYCLOBARBITONE, PHEMITONE, HEXOBARBITONE, PHENOBARBITONE

OXYQUINOLINE

POTASSIUM OXYQUINOLINE SULPHATE, CHINIOFONUM, DI-iodo HYDROXYQUINOLINE, (Powder and tablets)

ASPIRIN

ASPIRIN TABLETS

Enquiries Invited by:

PIERSON, MORRELL & CO. LTD.
THE ORIGINAL BRITISH ASPIRIN MAKERS
BARNET, Herts.

Telegrams: Pierson Morrell Barnet

Telephone: BARnet 0723

PACK CHEMICALS & DRUGS

*speedily, securely
and attractively
with*

Gosheron
self-adhesive TAPES

★ Use Transprint to name,
number, route, publicise

Samples with pleasure

JOHN GOSHERON & CO LTD
Gayford Road London W12

AUSTRALIAN
EUCALYPTUS OIL. B.P.
(70/75%) (80/85%)

MENTHOL CRYSTALS
(Chinese and Brazilian)

PEPPERMINT OIL
(M. Arvensis and M. Piperita)

AGAR AGAR
REFINED CAMPHOR
(Powder, Slabs and Tablets)

CITRIC ACID B.P.

TARTARIC ACID B.P.

ESSENTIAL OILS

DRUGS, GUMS AND
WAXES

Wm. Chas. BRUMLEU Ltd
IMPORT — EXPORT

Established 1854

4-5 HOGARTH COURT, FENCHURCH ST.,
E.C.3 Tel.: MANsion House 3150-2930



THE INTERNATIONAL BOTTLE CO LTD

PHONE:
MAYFAIR 6992
(5 LINES)

140, PARK LANE, LONDON, W.1

GRAMS:
AUTREFOIS, AUDLEY
LONDON

FOR

PATENTS

DRESSINGS

PILLS & TABLETS

DANGEROUS DRUGS

DRUGS & GALENICALS

ETHICAL PROPRIETARIES

SMITH & HILL
(Chemists) Ltd.SIDNEY ST., SHEFFIELD, 1
Phone: 24321*Health Insurance
demands*OBTAINABLE
ONLY FROM
CHEMISTALSO IN
INTERLEAVED
SELF CONTAINED
CARTON PACKS**HAROLD WESLEY LTD**
HARLEY MILLS
LONDON N.W.10

RECOMMEND

S.D.2

with confidence

**PENETRATES and REBUILDS DAM-
AGED TISSUE in SKIN ILLNESSES**Remarkable for the Treatment of Burns,
Spots, Rashes, etc.**BIO-COLLOIDS LTD., Altrincham, Cheshire**
BC85**ASPIRINS**

HOME AND EXPORT

7½ & 5 grain

Packed or Bulk

• **HARRINGTONS**

London Office: 2 BERRIDGE Grn., EDGWARE, LONDON

Now Available ...

**SACKERS HYGIEN
METAL COM**Will remove Nits, Vermin
from hair and so
SAQUERRE LTD. 62-64 BROOK STREET, LONDON,**HERE'S A STING**Why is Calsol Milk a best seller? because
it doesn't solidify, doesn't separate—
keeps its satin-smooth creaminess on the
beach, in the home—and on your shelves!**HERE'S A THING****CALSOLO MILK**

made by

JEFFREYS MILLER & COMPANY LIMITED
LEYLAND MILLS WIGAN

**Chemists
all over the
country**



Cash in on Coloral

Coloral — the new French Hair Colour rinse, has achieved new sales records every month since its introduction to this country last June. It is now, beyond question, an *established success* and tens of thousands of women are *regular users*. If you are not stocking COLORAL you are missing a quick selling line which will bring you *ever increasing profits*. The attractive cards, each carrying two rinses, have only to be shown to sell. Get a stock from your wholesaler NOW!

COLORAL

Liquid

HAIR COLOUR-RINSE

Regularly advertised in the leading Women's Magazines and on London's Underground.

Made in six shades—Burnished Gold, Auburn, Deep Brunette, Hazel Brown, Velvet Brown, Steel Blue.

In attractive display outers each containing two dozen cards.

Retail Price :

1/3 per card of 2 Rinses

TRADE PRICE: 6/- per dozen cards (plus 100% tax), in boxes of two dozen cards of any one shade or in a fixed assortment of two dozen.

Product of L'Oreal, Paris.

Stocked and Distributed in Great Britain by

GOLDEN LIMITED · 2/4 DEAN STREET · LONDON · W.1 GERard 4926

· QUALITY · SERVICE ·

TABLETS

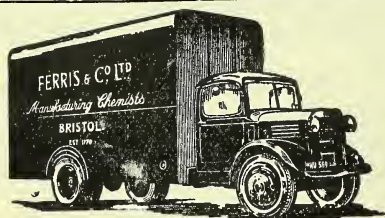
We
exercise the great-
est care in the manufac-
ture of proprietary lines

PROPRIETARY REMEDIES

and can supply either in
bulk or packed for market,
including the printing
of special labels &
cartons

**THE COOPER LABORATORY
LIMITED**

OLD FARM ROAD
WEST DRAYTON
MIDDX.

COMPETITIVE PRICES**REGULAR ROAD DELIVERIES**

*In the West of England and
South Wales Areas*

*The House in the West for all
Chemists' Supplies*

Send us your orders for prompt and
careful attention.

**FERRIS & COMPANY LTD.
BRISTOL**

Manufacturing and Wholesale
Chemists

Telephone:
BRISTOL 21381

Telegrams:
FERRIS, BRISTOL

**CRUDE
DRUGS****ESSENTIAL****GUMS****OILS****WAXES****BROME & SCHIMMER****WHOLESALE DRUGGISTS**

**BOTANICAL DRUG AND SPICE IMPORTERS
DRUG AND SPICE MILLERS**

7 LEATHER MARKET, LONDON, S.E.1

**CAFFEINE B.P.
CALCIUM GLUCONATE B.P.
EPHEDRINE
HYDROCHLORIDE B.P.**

FERRO METAL & CHEMICAL CORP. LTD.
60 ST. PAUL'S CHURCHYARD, LONDON, E.C.4
Phone: CITY 7125

And at
NEW YORK, STOCKHOLM, BERLIN, PARIS

RECOMMENDED FOR NERVES

**DR. NIBLETT'S
VITAL RENEWER
NERVE SEDATIVE**

for
70 YEARS
Retail price
6/-
per bottle
including
purchase tax.

TRADE DISCOUNT 33½%

C. P. NIBLETT (Est. 1870)
10 LICHFIELD TERRACE, RICHMOND, SURREY
Telephone: RICHmond 3221

For Safe Control of
Body Odour & Bad Breath

Odoban

TABLETS

Nature's Deodorant

Regularly
Advertised
to the
General
Public



Manufactured in England by

OOK, PARKER & CO. LTD., BRADFORD.

THE Spray Way Pays!



Spray your own pharmacy with
ZOFLORA. Your customers will
appreciate the fresh, fragrant
atmosphere and will wish to try
it at home.

**IT'S SO EASY TO CREATE
INTEREST IN**

Zoflora

Perfumed DISINFECTANT

From 2/6 per
bottle.

Complete Spraying
Outfit 12/6 & 30/-

THORNTON & ROSS

LIMITED
LINTHWAITE LABORATORIES
YUDDERSFIELD ENGLAND

OINTMENT MILLS

Super Speedy Mill

IN REGULAR USE ALL OVER THE WORLD

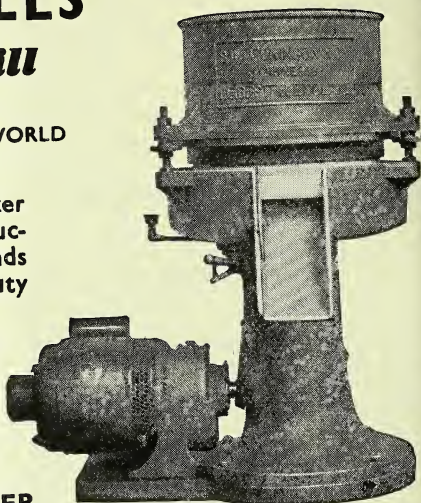
THIS Machine is a combined Mixer and Grinder and is used very successfully in the production of all kinds of Ointments, Tooth Pastes, Beauty Creams, Patent Foods, etc.

Each Machine Incorporates Thirty Years' Accumulated Experience

S. W. WILKINSON & CO. LTD.,

Chemical Engineers and Specialists in Pharmaceutical Machinery

WESTERN ROAD - LEICESTER



POISONS LAW . . .

is complex and vexatious as problems can arise at awkward moments. The best, safest and most up-to-date guide to this intricate legislation is

The Chemist and Druggist

POISONS GUIDE

Price 20s.

20s. 6d. post free

28 ESSEX STREET, STRAND, LONDON, W.C.2



Individually packed
in cartons

DISPLAY CARD OF 18

RETAIL 2/3 PRICE

The remarkable success of the "Craigway" Corn Plane is due to the new principle involved. The angle of the blade is the secret. This new and profitable line only needs showing to SELL!

15/4 per doz. plus
Purchase Tax
Usual discount to
Wholesalers

Sole Distributors:
CRAIG & PARSONS LTD., 82, Stafford Road, Wallington, Surrey
Phone: Wallington 3694

GOING GREY?



Keep it
DARK *with*
SHADEINE

— Your **SALES** are assured if
you stock **SHADEINE**!

Still the best hair tint. In all natural shades.
Stocked by all wholesalers. Trade prices—1 oz.
18/- per doz., 2 oz. 29/7 per doz. Purchase Tax
100%. Retail Prices 3/6 and 5/9 per bottle
respectively. Also the new **GOLDEN SHADEINE**
for lightening mousey hair. 2 oz. 18/- per doz.,
Purchase Tax 100%. Retail Price 3/6 per bottle.



THE SHADEINE CO.
49 Churchfield Rd. Acton, London, W3.

*Recommend to
your customers*

Ralgex

**ANALGESIC — RESOLVENT
COUNTER-IRRITANT**

SOLID EMBROCATION

for
**RHEUMATIC and MUSCULAR PAINS
NEURALGIA and HEADACHES
BRONCHITIS, CATARRH and LARYNGITIS**

Handy, clean, practical and efficacious.
Prescribed by doctors and regularly
advertised in medical and nursing
journals.

Write for trade terms, samples & literature.

PHARMAX LIMITED



The Organ Works, Old Hill, Chislehurst, Kent

SUMNER'S

of

Liverpool and Cardiff

for

Prompt Service
and
Personal Attention

DRUGS

GALENICALS

PROPRIETARIES

Makers of

Vitasac
Regd

THE PERFECT BABY FOOD

R. SUMNER & CO. LTD

Manufacturing Chemists

HANOVER ST., LIVERPOOL, 1

Phone: Royal 6644

& 1 FITZALAN RD., CARDIFF

Phone: 29147

PHARMACEUTICAL EMULSIONS & EMULSIFIERS

by L. M. Spalton, B. Pharm., M.P.S.

Today, the pharmacist is faced with an almost bewildering assortment of emulsifying agents, all having varying properties and requiring different methods of treatment.

In this book the considerable range of these products has been classified together with essential practical points about their pharmaceutical use. It contains chapters devoted to the theory of the formation of emulsions, properties of different emulsifying agents (classified into groups according to their structure and characteristics), the formulation and preparation of emulsions, the general methods of preparing emulsions with details of technique and causes of emulsion separation, preservation and storage of emulsions etc.

The practical uses of emulsions is dealt with at considerable length, together with methods of handling each type of emulsifying agent and full notes of incompatibilities and other matters.

The book also contains a classified index of over 300 emulsion agents used in the Drug, Toilet and Cosmetic trades and other industries, with references to their composition, type and uses together with an index of manufacturers.

Useful and up-to-date—this book provides essential information in concise form.

EVERY PHARMACIST SHOULD POSSESS A COPY

5/6 post free

Send remittance with order to:—

The Publisher, THE CHEMIST & DRUGGIST
28 Essex Street, Strand, London, W.C.2

Firm Favourites *with all the family*

Every woman wants bathtime luxury and day long freshness — sell her delicately perfumed mildly medicated Cuticura Soap and Talcum Powder. Many of your customers have a “problem skin” — Cuticura Ointment is the perfect answer.

Baby loves the soothing comfort of mildly medicated Cuticura Soap, Talcum, Ointment. Recommend Cuticura for chafing and nappie rash, and convince all careful mothers that nothing else will do for baby’s tender precious skin.

Men customers are won by the smooth comfort of Cuticura mildly medicated Shaving Stick, in smart plastic container, and will return again and again for refills.

Cuticura

MEDICATED & TOILET

SOAP · OINTMENT · TALCUM · SHAVING STICK

USE CHEMISTS STOCK AND DISPLAY

THIS WIDELY ADVERTISED FAMILY RANGE — NOW IN ATTRACTIVE DISPLAY OUTERS

British Distributors: NEWBERRY & PHILLIPS LTD., 203 Victoria House, Southampton Row, London, W.C.1. Phone: HOLL 1564
Manufacturers: POTTER DRUG & CHEMICAL CORPORATION, 205-207 Victoria House, Southampton Row, London, W.C.1.

Belfast Telegraph

THE HOME NEWSPAPER THROUGHOUT

NORTHERN IRELAND



B. P. QUALITY

Mag. Carb. Levis. · Mag. Carb. Pond.
 Mag. Oxide Levis · Mag. Oxide Pond.
 Mag. Trisilicate
 Mag. Hydrate. · Mist. Mag. Hydrox.

**SUPPLIED THROUGH ALL WHOLESALEERS
 BY THE SOLE MANUFACTURERS:**

THE WASHINGTON CHEMICAL CO., LTD.
(A MEMBER OF THE TURNER AND NEWALL ORGANISATION)
 WASHINGTON, COUNTY DURHAM

LONDON OFFICE:
 EVERITE HOUSE, 59, SOUTHWARK ST., S.E.1
MANCHESTER OFFICE:
 74 PALMERSTON STREET, MANCHESTER, 12



*Keep your fingers on the PULSE . . .
of the EXPORT MARKETS . . .*

by reading

THE
EXPORT REVIEW
OF THE BRITISH DRUG AND CHEMICAL INDUSTRIES

The only British monthly export journal catering for the needs of the drug, chemical and allied industries.

Subscription

25/- per annum

A limited number of home subscriptions can now be received

*Send remittance and trade card to—
The Publisher*

The EXPORT REVIEW
28 ESSEX STREET, STRAND
LONDON, W.C.2



Lemons
Glucose
Scotch Barley
Sugar

For acidosis ...
recommend
Rayner's
Lembar
all the year
hot or cold



MADE BY RAYNER AND COMPANY LIMITED, LONDON, N.18

THE
SYMBOL
OF



QUALITY
AND
SERVICE



Aspirin Salicylates
and Allied Products

Graesser Salicylates Ltd.
SANDYCROFT **NEAR CHESTER**
Phone: HAWARDEN 2125 Grams: Quality Chester

"Eagle" Brand Chemicals

B.P.
**PRECIPITATED
SULPHUR**

**PHOTOGRAPHIC
HYPO
AND
SULPHITE**
— CRYSTALS and ANHYDROUS —

**EPSOM SALTS
GLAUBER SALTS
ARSENATE OF LEAD**

Enquiries Invited

JOHN RILEY & SONS, LTD
Chemical Manufacturers
HAPTON near BURNLEY

Telegrams:
"Rileys Hapton"

Telephone:
Padiham 290/1

Lucozade sales given greater energy through advertisements in the



NEARLY
8,000,000
FAMILIES WILL
BE INFLUENCED
TO BUY
ENERGY-REPLACING
LUCOZADE
-THE SPARKLING
GLUCOSE
DRINK

RADIO TIMES
The Nation's Shop Window

Lucozade
the sparkling **GLUCOSE** drink

TIME FOR LUCOZADE!
When your energy is flagging, and a breather in the game is called for, then is the time for Lucozade! This sparkling drink contains Glucose, nature's great energiser, in the most delicious form imaginable. Lucozade replaces your vitality quickly and pleasantly. It is invaluable in sickness and in health. Everyone needs Lucozade—get a bottle today!
26d. plus 3d. bottle deposit (returnable).
Also in handy size at 8d. plus 2d. bottle deposit.

Lucozade
is used by Doctors and Nurses in Clinics,
Hospitals and School Sanatoria.

GREAT WEST ROAD, BENTLEY, MIDDLESEX

Stock and DISPLAY goods advertised in the

Radio Times, with a life of nine days plus is handled constantly in 60% of the homes of Great Britain. Be prepared for the demand for Lucozade following the publication of this advertisement.

RADIO TIMES

Average weekly net sale for 1951 (A.B.C.) 7,880,718

Advertisement Dept. B.B.C. Publications, Broadcasting House, Portland Place, London, W.1

Sells Ltd., Brettenham House, Strand. W.C.2

The CHEMIST AND DRUGGIST



for RETAILER — WHOLESALE — MANUFACTURER

AUGUST 2, 1952

Published weekly at 28 Essex Street, Strand, London, W.C.2

Telephone: Central 6565 (10 lines). Telegrams: "Chemicus, Estrand, London."

Single copies 1/- each. Annual Subscription, which includes The Chemist and Druggist Diary and Year Book, £2

Volume CLVIII

CONTENTS

No. 3780

A College with an International Air	149	National Pharmaceutical Union	139
British Research 1950-51	137	New Books	170
C. & D. Refresher Course	168	New Companies	134
Courses for Pharmacy Students	159	Overseas Economic Reports	175
Deaths	135	Packages, Products and Sales Aids	145
Editorial Articles:—		Personalities	135
"Hardships" of Leaseholders	153	Phytopharmacy	147
Square Meals for Babies	154	Price Changes	Coloured Supplement
From Want to Plenty	154	Qualifying Examination Syllabuses	156
Research Increasing	154	Science Papers at the Conference	138
EDUCATIONAL DATA	155-66	Scottish News	131
Engineering in the Syllabus	167	Statements on Ethics and Assistants	141
How to Become a Pharmacist	155	The Week in Parliament	136
Irish News	132	Tools, Plant and Equipment	146
Legal Reports	136	Topical Reflections	133
Local News	131	Trade Notes	143
Manufacturing in Mexico	175	Trade Report	171

NEWS OF THE WEEK

Drawback on Castorseed.—The Treasury have made an Order (S.I., 1952, 339), increasing from £3 to £6 a ton the drawback on castorseed used in the manufacture of castor oil which is exported or shipped as stores.

Pest Control Association Officers.—The Industrial Pest Control Association has elected its officers for 1952-53 as follows: *President*, Mr. S. W. Hedgcock (Chelsea Insecticides, Ltd.); *Vice-President*, Mr. R. Leitch (Ratsouris, Ltd.); *Treasurer*, Mr. S. F. Sprange (London Fumigation Co., Ltd.); and *Secretary*, Mr. W. A. Williams, 166 Piccadilly, London, W.6.

Educational Appeals.—A target of £50,000 is aimed at for the 197th (1952) maintenance appeal of the Royal Commercial Travellers' Schools, Hatch End, Middlesex. The president of the appeal will be Alderman C. Gordon Maynard. Donations should be sent to Mr. H. Carpenter (secretary), Kings Court, 3 Broadway, London, S.W.1.—The D. J. Williams Bursary Fund of the Bristol School of Pharmacy is appealing for sub-

scriptions to be used to provide financial assistance to post-graduate research students. Donations should be sent to Mr. W. Cooper (treasurer), the School of Pharmacy, College of Technology, Unity Street, Bristol, 1.

Chemists' Exhibition.—The fifty-first chemists' exhibition is being held at the Royal Horticultural Hall, London, S.W.1, September 29-October 2. It will be opened by the president of the Pharmaceutical Society (Alderman W. J. Tristram). In addition to trade displays a retail dispensary exhibit and a hospital pharmacy and laboratory will be exhibited.

Expensive Prescription Claims.—The Ministry of Health has announced that orders for trusses and elastic hosiery supplied from July under the National Health Service are to be excluded from the classes of expensive prescriptions which may be sent in for special pricing. Chemists who have submitted ECN62 claims are being sent copies of a form which they are requested to fill in and attach to the expensive prescriptions sent in separately for July on-

wards. A form should be obtained from the Pricing Bureau by any other chemist wishing to submit a claim.

Origin of a Thermometer.—The report on the work of the National Physical Laboratory for the years 1940-45 recently published (H.M. Stationery Office, Kingsway, London, W.C.2, price 5s.) reveals that for use in hyperthermy treatment a clinical resistance thermometer outfit was designed in the physics division for the Army Medical Services. It had an accuracy of about $\pm 0.02^\circ \text{F}$. and permitted a continuous watch to be kept on the temperature of the patient throughout treatment without frequently opening the cabinet.

Memorandum on Optical Registration.—The council of the Institute of Optical Science has published a memorandum on the report of the interdepartmental committee on the statutory registration of opticians (see *C. & D.*, May 17, p. 663). The Institute would welcome statutory registration of opticians, but not, states the memorandum, on the terms given in the report. Some of the conditions are regarded as detrimental to the interests of the optical profession and the public. The council is issuing a questionnaire so as to obtain a mandate from its members.

Report on Caribbean Area.—A report on the British Dependencies in the Caribbean and North Atlantic for the years 1939-1952 published by H.M. Stationery Office (Cmd. No. 8575, price 3s. 6d.), states that malaria has ceased to be the most endemic disease in many of the territories because of the effective control of mosquitoes by DDT. Tuberculosis is now a serious problem. In British Guiana, for example, there had been slow improvement up to 1947 but since then the incidence of pulmonary tuberculosis had risen from 53 to 90 per 100,000.

Tuberculosis Conference.—On the second day (July 9) of the Commonwealth and Empire Health Tuberculosis Conference (see *C. & D.*, July 12, p. 33), Mr. Iain MacLeod (Minister of Health) said that deaths from tuberculosis in England and Wales were, in 1951, the lowest on record. Mr. MacLeod said that it was not felt that the time had yet come to make BCG vaccine available for general use. That view was based on expert judgment, and was not due to limitations of supply of the vaccine or to financial economy. It was not necessarily a fixed policy. The Ministry would take careful account of

whatever expert advice might be forthcoming in the light of continuing studies and research. Mr. Oliver Lyttelton (Secretary of State for the Colonies) said that since in the Colonies, the spread of malaria had greatly decreased through the discovery of new insecticides, tuberculosis is now at the head of the list of "kill diseases."

Approved Names.—The British Pharmacopœia Commission issued recently a supplementary list of approved names for drugs (see also *C. & D.*, 1951.II.137). The following are the new names:—

APPROVED NAME	OTHER NAMES
Alphameprodine	α -3-Ethyl-1-methyl-4-phenyl-4-propionyloxy-piperidine
Betameprodine	β -3-Ethyl-1-methyl-4-phenyl-4-propionyloxy-piperidine
Hydroxyprocaine	2-Diethylaminoethyl 4-amino-salicylate
Isoniazid	isoNicotinhydrazide; Cotinazide; Hydrazid; Mybasan; Pycozide; Rimifon; Tubomel
Penethamate	Benzylpenicillin 2-diethylaminoethyl ester hydriodide; Estop
Hydriodide	
Pyrimethamine	2:4-Diamino-5- <i>p</i> -chlorophenyl-ethylpyrimidine; Daraprim

Examination Results.—The following satisfied the examiners in the Chemist and Druggist Qualifying examination in England and Wales held by the Pharmaceutical Society in July:—

Alexander, Kenneth M.	Liber, Edward
Biles, Mary J.	Major, Dorothy (Mrs)
Bove, Angelica M.	Miles, Arthur W.
Bowen, Pauline G.	Morris, Margaret C.
Bowman, Arnold H.	O'Hea, Kathleen E.
Callow, John R.	Parry-Jones, John
Carter, Donald	Payne, Joy C. V.
Carter, Raymond P.	Pitcher, Irene
Challinor, Nora M.	Rainbow, Doreen R.
Claret, Barbara A.	Renek, Krystyna
Cole, Percy J. A.	Robertson, Eunice M.
Colwell, Jean R.	Siddy, Joan M.
Cross, Jean M.	Slack, Joel A. H.
Davies, John G. L.	Thomas, Betty A.
Davies, Kathleen R.	Thomas, Ieuan E.
Demby, Carl	Thomas, Thomas E.
Emery, Beryl F. M.	Thorne, Valerie M.
Faulkner, Joan	Tuffin, Richard E.
Fletcher, Charles	Wagstaff, Helen (Mrs)
Frampton, Joan P.	Waldron, Anne
Gibson, Dorothy M.	Wand, Sylvia J.
Grundlingh, Sheila	Ward, Mary E.
Hague, Elizabeth M.	Whipps, Barbara W.
Harrison, Donald G.	White, Reginald W.
Hicks, Jean M.	Whitehead, Joan D.
Hunt, Valerie	Woodhead, Eunice
Hunter, Neville R.	Woodyatt, Anita P.
Hurr, David J. W.	Worrell, Joyce M.
Keane, David G.	Young, Marion P.
Lewis, Albert J.	

LOCAL NEWS

Liverpool Outing. — The Liverpool Chemists' Association and Branch of the Pharmaceutical Society held a well-attended excursion, organised by Mr. J. Farrer-Barnes, to Speke Hall on July 23. Refreshments were served in the great hall. The thanks of the visitors were expressed to the warden by Mr. L. A. Butt (vice-president).

New Laboratories for Leicester School. — Three new laboratories (for pharmacology, bacteriology and research) are being provided at the School of Pharmacy, Leicester College of Technology. The extensions are intended for the use of students taking external B.Pharm. degrees, study for which is commencing in September.

Praise for Lincolnshire Chemists. — The smooth running of the National Health Service in the Holland, Lincs. area and the way in which pharmacists and the local Executive Council co-operated, were mentioned by Mr. E. W. Roythorne (chairman of the Lincolnshire (Holland) Executive Council) at a dinner of the Lincs (Holland) Pharmacists' Association held in Boston recently. Mr. P. D. J. Spaanderman (a member of the Executive of the National Pharmaceutical Union) pointed out that the National Health Service had done much to ensure that dispensing was carried out by pharmacists. Dr. J. Fielding (County Medical Officer of Health) described the progress towards prevention of disease.

Company Scholarship Examination. — Timothy Whites & Taylors, Ltd., held their annual scholarship and prize examination at the University of Leeds on July 22. More than 150 students under the company's training scheme sat for the examination after which they made a tour of the company's head office and warehouses at Burley Hill, Leeds, and the manufacturing premises of the subsidiary company, W. B. Cartwright, Ltd., Rowdon. A presentation of long service awards was later made to eight members of the company's staff by Mr. G. I. Rushton (vice-chairman and managing director). Each man received a cheque for £100 for forty years' service and each woman £50 or twenty-five years' service. The 200th long service award went to Mr. P. C. Munday, Kingston-on-Thames.

Birmingham Analyst's Report. — Mr. I. H. Bagnall (Birmingham City Analyst)

in his recently issued report for the first quarter of 1952 records that the following informal samples of drugs taken by his department were incorrect:—Ammonia (one of three); disinfectant (one of seven); eye lotion (one of two); glycerin (one of three); health salts (one of three); tincture of iodine (one of two); ammoniated tincture of quinine (two of three); sal volatile (one of two); seidlitz powders (three of eight); and white precipitate ointment (one of three). The eye lotion that was wrong had a formula on the carton which did not correspond with the correct formula on the bottle. The sample of health salts was shown on the label to contain 5.75 per cent. sodium sulphate. That figure was found to apply to anhydrous salt (equivalent to 13 per cent. of British Pharmacopœial sodium sulphate). The makers agreed to insert the word "exsicc." The tincture of iodine was B.P. 1932 stock. One sample of ammoniated tincture of quinine was labelled B.P. although it is not included in the B.P. 1948, but in the British Pharmaceutical Codex, 1949. It was also deficient in ammonia and was unsatisfactorily packed with a plastic screw cap. The other incorrect sample of ammoniated tincture of quinine and the sample of sal volatile were also deficient in ammonia. The three wrong samples of seidlitz powder were not of B.P. quality; the wrappers of two samples were not damp-proof; in the third case the sample was stated to be lemon flavoured but there was no trace of that flavour.

SPORT

Golf. — BIRMINGHAM and MANCHESTER CHEMISTS' GOLFING SOCIETIES annual match for B.D.H. trophy at Hawkestone Park, July 20 (decided on alliance scoring). Winners: Manchester (505 strokes for seven pairs against Birmingham's 513). Individual prize for Lilo trophy (best net score): Mr. W. E. Phillipson, Manchester (6), 68 net. Presentations were made by Mr. J. E. Mossman on behalf of The British Drug Houses, Ltd. and by Mr. A. Pullen for P. B. Cow & Co., Ltd.

SCOTTISH NEWS

Pharmacy Explained to Young Scots. — A recent article in a series "Careers for Young Scots" in the Glasgow "Bulletin," dealt with the subject of pharmacy.

Hamilton Rota Scheme. — National Health Service chemist contractors in Hamilton, Lanarks, started, on June 22, a rota service for Sunday and whole holiday duties. The Sunday hours of service are from 2 to 4 p.m.

Aberdeen Delegates Report.—A meeting of the Aberdeen Branch of the Pharmaceutical Society was held in Aberdeen on June 5. Messrs. R. J. Cowie (vice-chairman) and W. S. Taylor (secretary) reported on their attendance at the recent Branch Representatives' meetings of the Society and Scottish Department in London and Edinburgh respectively.

Expensive Prescribing Penalised.—As the result of an inquiry made by a sub-committee of the local Medical Committee on the instructions of the Department of Health, Inverness Executive Council on July 10 agreed that a fine of £25 should be imposed upon a doctor for the excessive use of expensive proprietary preparations. In one case there had been a cost of £540 for 157 prescriptions, and in another 137 prescriptions were priced at £60 15s. 4d.

Heriot-Watt Prize-winners.—At the annual presentation ceremony of the Heriot-Watt College in Edinburgh on July 10, the following were among the awards presented by the lord provost of Edinburgh (Mr. James Miller, chairman of the governors of the College):—Duncan Memorial medal and prize for Pharmaceutical Chemist Qualifying examination course, third year, J. Rutherford Hill Conference prize for pharmaceuticals and Evans prize for pharmaceutical chemistry: Peter H. Smith; Boots prize for Pharmaceutical Chemist Qualifying examination course, third year, Victor N. Coward; Evans prizes for Pharmaceutical Chemist Qualifying examination course, second year, William Y. Samuel and Alistair J. Fraser; Boots prize for Pharmaceutical Chemist Qualifying examination course, second year: Leslie Flint; and Malpas Memorial prize for physics (Intermediate examination course): John S. S. Kerr.

Levy "Conceived in Haste."—At a meeting of the Edinburgh Executive Council recently, Mr. J. C. Somerville, M.P.S., said that the regulations imposing the shilling levy had been "conceived in haste by people with no idea of the circumstances under which they have to be implemented." The Council agreed, unanimously, to forward to the annual conference of the Scottish Association of Health Executive Councils, to be held in Inverness in September, a resolution asking that the prescription levy be altered "in order to obviate embarrassment caused to patients by having to disclose their circumstances in a public place." Bailie J. J. Stone suggested the regulations might be

altered so that persons entitled to the free prescription could present their credentials to their medical practitioner, who would then issue a prescription on a special form which, when presented to the chemist, would be dispensed without the need for payment.

IRISH NEWS

Closed During August.—The headquarters of the Pharmaceutical Society of Ireland at 18 Shrewsbury Road, Ballsbridge, Dublin, will be closed during the month of August.

Consultants Not to Issue Prescriptions.—Arrangements between the Northern Ireland Hospitals Authority and the General Health Services Board for the issue of prescriptions by consultants in hospitals have been terminated. In future, consultants will not prescribe medicines or appliances for patients leaving hospital but will refer the duty to the patients' general practitioners.

N.I. Society's Council Entertained.—The president (Mr. H. W. Gamble) and members of the Council of the Pharmaceutical Society of Northern Ireland, accompanied by their ladies, were the guests of the Londonderry and Strabane Chemists' Association on July 24. Following the Council's monthly meeting and a luncheon in Londonderry, the members were taken to Binion Bay and Clonmaney where they were entertained to tea. They were welcomed on behalf of the Londonderry and Strabane Association by Messrs. R. R. Harpur (chairman), E. O'Hare (secretary) and S. E. Campbell (the local representative on the Council). Mr. Gamble returned thanks for what he described as a happy annual visitation.



Members of the Council of the Pharmaceutical Society of Northern Ireland in Londonderry on July 24. In front from left to right are Messrs. E. O'Hare (secretary of the Londonderry and Strabane Chemists' Association), S. E. Campbell (Londonderry representative on the Council), H. W. Gamble (president of the Pharmaceutical Society of Northern Ireland), W. H. Boyd (vice-president), James Irwin and H. J. Cousley.

TOPICAL REFLECTIONS

Apprenticeship Discussed

The discussion at Edinburgh on apprenticeship (pp. 121-23) is well worth reading. Practical as usual, the Scottish pharmacists did not hesitate to put forward their own views, even when those views may have appealed to only a minority. Three of the speeches are all that I have space to mention. "The replacement of men able to practise retail or dispensing pharmacy" was, Mr. H. H. Campbell said, the matter on which the profession should concentrate. "Concentrate" may not be the most suitable word in this connection; but the replacement referred to should, I suggest, be the first consideration, because most pharmacists choose retail business for a career. In a pharmacy school, Mr. Campbell continued, not training but only finishing touches can be given. He regards it as a dangerous practice to put graduates on the Register without proper practical training; if the time comes when they decide to open a pharmacy, it may, he says, lead to trouble. Another thoughtful speech was made by Mr. C. G. Drummond, who would like to see training extended in a more cultural way. I agree with his view that, in the past, pharmacy "lost a great deal through the narrow training ground which it offered." University graduates are reputed to be sent into the world with an adequate cultural background; but it may be long before a university training becomes the usual way into pharmacy. Finally, Dr. McCall's question whether the age of twenty-one is too early for admission to the Register should be considered seriously. Medical men and dentists are not registered at that age; pharmacists might gain from registration at, say, twenty-three as the minimum age.

Dr. George Urdang

The celebration of Dr. George Urdang's seventieth birthday and of the completion of his professorship of the history of pharmacy at Wisconsin University (p. 111) was a fitting recognition of a distinguished pharmacist. After graduating in 1905 at Leipzig University, Dr. Urdang was for nine years the proprietor of a pharmacy at Rosenberg, West Prussia. He was editor of the "Pharmazeutische Zeitung" from 1919 till 1934. During those years he became Doctor of Natural Science of Halle-Wittenberg University, and founded at Innsbruck,

with the help of friends, the *Gesellschaft für Geschichte der Pharmazie*. This body, with a membership of more than 1,000, became inactive during the recent war but was revived in 1949 with the prefix "*Internationale*." Dr. Urdang arrived in the United States in 1938. In the following year he obtained a degree at Long Island University and passed the pharmacy examination of New York State. In collaboration with the late Dr. Edward Kremers he wrote the Kremers-Urdang History of Pharmacy: the second edition, revised by him, appeared last year. The American Institute of the History of Pharmacy, of which he remains the director, was founded in 1941. Between 1940 and 1952 a constant flow of books, pamphlets and articles has come from his pen, and during the same period, numerous distinctions have been conferred on him.

Before Thermometers Were Used

We may wonder how heat was estimated in pharmaceutical operations requiring it before thermometers were used. Experience in handling one set of apparatus was no doubt an important guide. In comparatively recent years I have known a satisfactory ointment of mercuric nitrate made without the help of a thermometer; and one of the most accomplished pharmacists of my acquaintance scorned the use of a water bath for making suppositories. In pre-thermometric days, furnaces of different designs had separate uses. By careful management of flues and manipulation of fuel a range of temperature was obtained. For prolonged operations baths of various kinds came into requisition. The water bath (*balneum humidum immersionis*), into which another vessel was inserted, had its twin in the steam bath (*balneum vaporosum*), where no such contact took place. There were three kinds of dry bath—the sand bath, the bath of ashes (*balneum cinerum*), and the bath of iron filings (*balneum scobis ferri*). The importance of obtaining what were regarded as correct amounts of heat was set forth in "*Chimia in Artis Formam Redacta*," a seventeenth-century treatise by Zacharia Brendel. Its numerous sections were allotted to details of the degrees of heat and the kinds of baths required for the operations described by the author. The processes selected by him are of considerable interest in the pharmaceutical world.

Xrayser

NEW COMPANIES

PROSTAN LABORATORIES, LTD. (P.C.).—Capital £100. To carry on the business of manufacturers of and dealers in pharmaceutical, medicinal and chemical products, etc. Gladys Fane and Robert E. Smith, subscribers. R.O.: 2 Broad Street Place, London, E.C.2.

WARDLE FACTORS, LTD. (P.C.).—Capital £1,000. To carry on the business of importers, exporters, dealers and manufacturers of chemicals, drugs, medicines, etc. Doris Hudson, Joan R. Borin and Joyce Wacks, directors. R.O.: 18 Lloyd Street, Manchester, 2.

AIDEE HOME & EXPORT Co., LTD. (P.C.).—Capital £100. To deal in all kinds of articles, in particular chemicals and cosmetics, etc. Leopold K. Wynschenk and Noreen E. B. Wynschenk, subscribers. R.O.: 20 Vicarage Road, Edgbaston, Birmingham.

CREIGHTON LABORATORIES, LTD. (P.C.).—Capital £1,000. To carry on the business of manufacturers of and dealers in chemicals, drugs, gases, medicines, etc. Muriel E. Pink and Douglas H. H. McDonald, 190 Creighton Avenue, London, N.2.

FRESHNESS, LTD. (P.C.).—Capital £1,000. To carry on the business of manufacturers of and dealers in toilet, chemical, medicinal and other preparations, etc. Stephen A. Fenlaugh and John F. Goble, subscribers. Solicitors: Herbert Smith & Co., 62 London Wall, London, E.C.2.

WILSON & WOODS, LTD. (P.C.).—Capital £100. To carry on the business of manufacturers of and dealers in chemicals, insecticides, etc. Ernest Wilson, Edwin F. J. Woods, Jack R. Wilson and Kenneth Wilson, directors. R.O.: 21 High Road, Willesden Green, London, N.W.10.

A. J. GEMMILL & Co. (DYESTUFFS), LTD. (P.C.).—Registered in Edinburgh. Capital £2,000. To carry on the business of agents for manufacturers of and dealers in chemical goods, gases, drugs, etc. A. J. Gemmill and Robert Russell, directors. R.O.: 27 Oswald Street, Glasgow, C.1.

HARRY DEVON & Co., LTD. (P.C.).—Capital £100. Objects: To carry on the business of manufacturers of and dealers in waving lotions of all kinds, etc. Harry Devon, John Collins and Henry Da Costa, directors. R.O.: 46 Curzon Street, London, W.1.

FEEDRITE, LTD. (P.C.).—Capital £100. To sustain and develop the invention known as the Feedrite baby feeder, etc. Joyce French and Stanley E. Renshaw, subscribers. R.O.: Norfolk House, 7 Laurence Pountney Hill, London, E.C.4.

JOHN CLARK & Co. (MANUFACTURING CHEMISTS), LTD. (P.C.).—Capital £5,000. To acquire the business of manufacturing chemists, carried on as John Clark & Co., at 75 West Street, Sheffield. Charles A. Gardner, M.P.S., (Mrs.) I. Gardner and Charles W. N. Gardner, directors.

PINECLIFF PHARMACIES, LTD. (P.C.).—Capital £100. To carry on the business of wholesale and retail chemists and druggists, photographers, etc. Sidney Ginsley, Zena Ginsley, John Cohen, M.P.S., and Barbara P. Cohen, directors. R.O.: 203 Seabourne Road, West Southbourne, Bournemouth.

Company News

BARCLAY & SONS, LTD.—Net profit for 1951 was £4,116 (against a loss of £3,568 in the previous year) after taxation, £457 (nil) and after providing £8,100 for compensation and damages to directors for termination of contracts, etc. A balance of £1,926 is carried forward and a dividend of 5 per cent. (nil) is proposed on ordinary capital.

MELLINS FOOD, LTD.—Gross profits on departmental trading for year ended March 31 did not cover overhead expenses and a loss of £4,467 added to debit balance of £800 brought in, increased the total deficit on profit and loss account to £5,267. Capital gain of £22,215 was realised from sale of property at Peckham, thus greatly strengthening company's finances.

VITAMINS, LTD.—Group profit for the year ended March 31 was £44,529 (against £63,755 in the previous year) after all charges other than U.K. taxation and including £3,011 surplus on repatriation of an overseas holding. U.K. taxation amounts to £16,751 (£20,225 less provision no longer required, £12,383=£7,842) leaving net group profit £27,778 (£55,913). The directors state that the turnover was a record and the higher trends of costs which adversely affected net margins during the year have now been reversed. Dividend of twopence per 1s. share, less tax, is recommended.

PERSONALITIES

MR. ROBERT GEORGE COCKBURN, M.P.S., Raunds, Northants, has been returned as an independent to the local urban council.

MR. M. WOOLF has retired after twenty years as representative in the Birmingham area for A. L. Simpkin & Co., Ltd., Sheffield.

MR. NORMAN HOUNSLOW, M.P.S., Long Sutton, Lincs, was awarded first prize for the best decorated shop front in a competition in connection with the Long Sutton agricultural show.

THE following have recently been elected Fellows of the Institute of Directors: Messrs. H. L. Curry (Cuxson Gerrard & Co., Ltd.), A. S. Cussons (Cussons, Sons & Co., Ltd.), Lieutenant-Colonel H. B. Dawson and Lieutenant-Colonel J. K. L. Wenham (Pond's Extract Co., Ltd.), Messrs. H. de Lacy and J. H. Read (Allied Paints & Chemicals, Ltd.), A. P. Homer (Ethicon Suture Laboratories, Ltd.), W. E. K. Piercy (Thomas Tyrer & Co., Ltd.), and J. D. Robinson (The Wellcome Foundation, Ltd.).

MR. JOHN RYAN, C.B.E., M.C. (vice-chairman, Metal Box Co., Ltd.), has been elected chairman of the British Standards Institution. Mr. Ryan was appointed chairman of the packaging standards committee on its formation in 1941 and he was concerned with the development of the wartime packaging code. In 1948 he succeeded Sir Roger Duncalfe (now president, B.S.I.) as chairman of the B.S.I. finance committee, and since then he has served on the general council and on its executive committee. Mr. Ryan is also a member and a fellow of the Royal Statistical Society.

MISS E. M. BRISTOWE, Ph.C., the recently elected president of the Hounslow Branch of the Pharmaceutical Society, is chief pharmacist at the West Middlesex Hospital, Isleworth. Miss Bristowe qualified as a chemist and druggist in 1918 and as a pharmaceutical chemist in 1922, taking her training at the then College of the Pharmaceutical Society. After retail and hospital experience (including a period at the Royal Free Hospital, London, as assistant pharmacist), she joined the staff of The British Drug Houses, Ltd., as pharmacist in charge of the poisons department. Subsequently she returned to the School of Pharmacy as demonstrator in pharmacy and personal assistant to Professor Greenish (Dean).

DEATHS

BRIGHT. — On July 26, suddenly, Mr. Richard Rowland Bright, M.P.S., 168 Church Road, Willesden, London, N.W.10. Mr. Bright qualified in 1920.

BUCKLEY. — At his home, on July 26, Mr. Frank Buckley, M.P.S., Clifton Villa, Oakworth, Keighley, Yorks, aged fifty-five. Mr. Buckley is survived by his widow and two daughters.

ELLIOT. — On July 20, Mr. William Marshall Elliot, Bingham House, Coldstream, Berwicks. Mr. Elliot qualified as a chemist and druggist in 1888.

FOOTE. — At 16 Kirkhill Road, Edinburgh, on July 22, Mr. James Miller Foote, M.P.S., 55A Mayfield Road, Edinburgh, 9. Mr. Foote qualified in 1900.

HIGHFIELD. — On June 27, Mr. Henry Highfield, Ph.C., Market Street, Huthwaite, Nottinghams, aged eighty. Mr. Highfield was a life member of the Pharmaceutical Society. He is survived by two sons.

HUNTER. — At his home, on July 22, Mr. Thomas Hunter, M.P.S., 6 Matilda Road, Glasgow, S.1. Mr. Hunter qualified in 1901.

JOHNSTON. — On July 16, Mr. Robert Adamson Johnston, 3 Ellice Place, St. Andrews, Fife. Mr. Johnston qualified as a chemist and druggist in 1900.

PALMER. — On December 11, 1951, Mr. Washington Palmer, M.P.S., 175 School Lane, East Didsbury, Manchester. Mr. Palmer qualified in 1901.

STUART. — On July 20, Mr. David Stuart, M.P.S., 747 Ormskirk Road, Pemberton, Lancs, aged fifty-eight. Mr. Stuart is survived by his widow.

THOMPSON. — At Farnborough, Hants, on July 22, Miss Louisa Thompson, M.P.S., Bolton. Miss Thompson, who was chief pharmacist at Bolton Royal Infirmary until January, qualified in 1917.

WILLS

MR. G. HAMPTON, M.P.S., 66 Elm Tree Avenue, Coventry, left £5,806 (£5,762 net).

MR. G. W. EVANS, M.P.S., 40 Mount Park Crescent, Ealing, London, W.5, left £23,253 (£22,773 net). He left £52 to the Pharmaceutical Society's Benevolent Fund.

MR. A. F. CORFE, Ph.C., Malvern House, Ashford Road, Maidstone, Kent, left £31,922 (£31,050 net). He left £100 to the Pharmaceutical Society's Benevolent Fund.

THE WEEK IN PARLIAMENT

By a Member of the Press Gallery, House of Commons

THE Minister of Food was asked by SIR WALDRON SMITHERS on July 21 what steps he was taking to implement the recommendations of the Medical Research Council for the addition of iodine to all salt for human consumption. MAJOR G. LLOYD GEORGE: The Food Standards Committee will, I hope, be able to advise me fairly soon how best to give effect to the recommendations.

Prescription Levy

MISS M. P. HORNSBY-SMITH (Parliamentary Secretary, Ministry of Health) told MR. B. JANNER on July 24 that full information on the amount of money collected so far under the levy scheme in the National Health Service was not yet available. The gross amount accruing from the charge on prescriptions dispensed in June was likely to be about £418,000.

Purchase Tax Investigations

MR. C. OSBORNE asked the Chancellor of the Exchequer on July 24 whether he could make a further statement concerning committees which he proposed to set up to deal with the treatment of taxed stocks on a reduction of purchase tax, and with the question of valuation of goods for purchase tax purposes. MR. R. A. BUTLER (Chancellor of the Exchequer): "I am now in a position to announce the setting up of a committee on the question of taxed stocks under the chairmanship of Sir Maurice Hutton." Members of the Committee would be: Messrs. B. Blackwell, C. E. Davies, J. Lawrie, W. K. MacG. Slimmings, A. Whittaker and G. D. N. Worswick. Its terms of reference would be:—

To examine the position of traders holding stocks of goods on which purchase tax or other duties of Customs and Excise have been paid, on an alteration of those rates on tax or duty; to consider how far there is a case in principle for the payment of compensation at the expense of the Crown for loss occasioned by a reduction of tax; in so far as the committee consider that there is a case in principle for such compensation, to report what detailed arrangements can be recommended as being practicable and equitable as between one trader and another and as between the trade and the Revenue and to make such supplementary or alternative recommendations as they may think fit.

A committee to consider purchase tax valuation would be under the chairmanship of Mr. Frederick Grant, Q.C. Members would be: Sir Daniel Fennelly, Mrs.

Robert Hall, Mrs. Douglas Jay, Mr. W. H. Lawson and Sir Rolande Wall.

The terms of reference would be:—

To examine the representations of traders as to the principle of assessing purchase tax at a common value level; and to make recommendations as to the manner in which this or any alternative principle should be applied in valuation for purchase tax, having regard to the different points in distribution at which the tax has to be levied.

Both committees would start work shortly.

LEGAL REPORTS

Wool Contract Dispute.—Hugh Marshall & Co., Ltd., wholesale chemists and druggists, 20 King Street, Belfast, were plaintiffs in an action in the Ulster High Court on July 24, against Healy Dowdall & Co., Ltd., Lad Lane, Baggot Street Dublin, for the completion of a contract for one ton of surgical cotton wool. It was stated that the wool had been lying with the Great Northern Railway, Belfast since October 1951. The defendants said the order was a verbal one which had been cancelled but the plaintiffs denied having received the cancellation. The claim was settled on the terms that the defendants pay plaintiffs £170 to include costs, the wool to go back to the plaintiffs.

Drugs by False Pretences.—At Birkenhead magistrates' court, on July 14, William George Hargest, no fixed address was sentenced to six months' imprisonment for obtaining drugs, value ninepence, belonging to Birkenhead General Hospital Management Committee, by false pretences. He pleaded guilty. An inspector said that Hargest went to the hospital on July 4, gave the name of Raymond McLelland North Shields, and told the casualty sister that he had been struck in the chest by a lorry. He complained of abdominal pains, and was put to bed and given morphine, Luminal and atropine. He was attended at various times by doctors and nurses, and in consequence of his condition, preparations were made for an internal operation. Suspicions were aroused when he refused to undergo the operation and when questioned by a detective he gave another name and said: "I am on the drugs and I wanted them badly." Later, at the police station, he again coughed up blood and feigned collapse, and was again taken to hospital, where examination showed he had bitten his tongue to draw blood.

BRITISH RESEARCH 1950-51

Medical

INCLUDED in the report for 1950-51 of the Medical Research Council (H.M. Stationery Office, price 6s.) is a progress report on research on cortisone and ACTH. Work done in Britain following an invitation by Drs. C. J. Van Slyke (director, National Heart Institute, Bethesda, Maryland, U.S.A.) and T. Duckett Jones (chairman, American Council on Rheumatic Fever) to join in an investigation of the value of cortisone and ACTH in treating rheumatic fever, and particularly in preventing organic damage to the heart, is being carried out at six centres, using material specially provided from America. The final results are not expected for some years, but much work has been done on the use of cortisone in eye diseases, and experiments are being carried out on its effect on inflammation and repair and on healing and formation of scar tissue. During the year the first home-produced samples of ACTH were delivered under contract to the Ministry of Health and arrangements were made to encourage collection of animal pituitary glands. The promise shown by sisal as a source of the cortisone precursor hecogenin has already been dealt with in these columns (*C. & D.*, July 19, p. 84).

Investigations into the use of chloramphenicol, terramycin and aureomycin in the treatment of various obscure skin diseases, wound, urinary tract and eye infections, bronchiectasis, peritonitis, meningitis and septicæmia had yielded some promising results but more extensive clinical experience and bacteriological study were felt to be required before final conclusions could be reached. An antibiotic that was toxic by mouth (polymyxin E) had been shown to be remarkably effective in eliminating *Pseudomonas pyocyanea* from infected burns. Among antimalarials the most recently discovered, pyrimethamine, showed signs of being useful, particularly for suppression.

Chemical and Instrument

THE Federation of British Industries Industrial Research Committee has made a statistical survey of research and development investigations in British industry including chemicals and scientific instruments for the year 1950-51, based on returns from concerns spending at least £2,000 a year on that work.

The figures show that in a group of sixty-four chemical manufacturers a total of £8,903,000 was spent on research and development (2.4 per cent. of the total turnover of the concerns). The programme was carried out by 3,168 qualified staff, of whom 66.2 per cent. were chemists, and 12.1 per cent. engineers. Sixteen scientific instrument manufacturers devoted to same purposes 5.1 per cent. of their turnover, employing 234 qualified staff of whom 3.8 per cent. were chemists.

Sixty chemical manufacturers apportioned 10 per cent. of research and development expenditure to projects resulting from technical sales service, 88.5 per cent. to other projects within the companies and 1 per cent. to extra-mural research and development.

Expenditure on research organisations was not included in the report. Sixty chemical manufacturers had increased the floor space devoted to research and development during the past five years by sixty-two per cent., while the figure for fifteen instrument manufacturers was 161 per cent.

Sixty-two chemical manufacturers had increased their chemist research workers by about a third in that period and their engineers, metallurgists and a number of other research workers by about 100 per cent.

FIFTY YEARS AGO

Chelsea Physic-garden

From the C. & D., August 2, 1902

ON Friday, July 25, Earl Cadogan opened the new laboratories which have been erected on the Chelsea Physic-gardens for the purpose of botanical research. It will be remembered that some time ago a scheme was approved which vests the garden in the trustees of the London Parochial Charities, with a committee of management including representatives of the Treasury, the Technical Education Board of the L.C.C., the Royal Society, the Society of Apothecaries, the Pharmaceutical Society, and other bodies. It is provided that the garden shall be used for the promotion of the study of botany, with special reference to the requirements of general education, scientific instruction and research (including vegetable physiology), and instruction in technical pharmacology, so far as the culture of medicinal plants is concerned.

SCIENCE PAPERS AT THE CONFERENCE

TITLES and authors of the papers to be read at the Science Sessions of the eightyninth meeting of the British Pharmaceutical Conference, Nottingham, are:—

Tuesday Morning, September 2

1. THE DETECTION AND DETERMINATION OF ISONICOTINYLHYDRAZIDE. P. G. W. Scott.

2. THE ESTIMATION OF ISONICOTINIC ACID HYDRAZIDE. E. A. Haugas and B. W. Mitchell.

3. SOME OBSERVATIONS ON THE STRUCTURAL REQUIREMENTS FOR ANTIBIOTIC ACTIVITY IN THE CHLORAMPHENICOL SERIES. PART II. R. J. Collins, B. Ellis, S. B. Hansen, H. S. Mackenzie, R. J. Moualim, V. Petrow, O. Stephenson and B. Sturgeon.

4. CHANGES IN THE HYDROCYANIC ACID CONTENT OF CHLORODYNE ON STORAGE. H. A. Glastonbury.

5. THE APPLICATION OF EMISSION SPECTROGRAPHY TO PHARMACEUTICAL ANALYSIS. L. Brealey, D. C. Garratt and K. A. Proctor.

6. ETHYL ESTERS OF HYDNOCARPUS OIL STABILISED WITH CREOSOTE. G. E. Foster, E. L. Kendrick, E. Walton and W. D. Williams.

7. THE DETERMINATION OF ASCARIDOLE IN OIL OF CHENOPODIUM AND IN SOLUTION OF OIL OF CHENOPODIUM IN CASTOR OIL. A. H. Beckett and M. Dombrow.

8. THE POLAROGRAPHIC DETERMINATION OF RIBOFLAVINE IN COMPRESSED TABLETS AND AMPOULE SOLUTIONS. Sylvia Fowler and R. C. Kaye.

Tuesday Afternoon, September 2

9. THE DETERMINATION OF THYROXINE WITH SPECIAL REFERENCE TO TABLETS. D. C. M. Adamson, A. P. Domleo, J. P. Jefferies and W. H. C. Shaw.

10. THE PARTITION CHROMATOGRAPHY OF ALKALOIDS. PART IV. THE ASSAY OF SOLANACEOUS DRUGS. W. C. Evans and M. W. Partridge.

11. OBSERVATIONS ON THE PAPER PARTITION CHROMATOGRAM AS APPLIED TO THE DETECTION OF ALKALOIDS. D. N. Gore and J. M. Adshead.

12. DIGITALIS GLYCOSIDES, THE COLORIMETRIC ASSAY OF THE CHLOROFORM-SOLUBLE GLYCOSIDES OF DIGITALIS. C. J. Eastland, D. P. Lawday and E. H. B. Sellwood.

13. STUDIES IN THE GENUS DIGITALIS. PART I. THE COLORIMETRIC ESTIMATION OF DIGITOXIN AND OF PREPARATIONS OF *Digitalis purpurea*. J. M. Rowson.

14. STUDIES IN THE GENUS DIGITALIS. PART II. A COMPARISON OF THE COLORIMETRIC AND BIOLOGICAL METHODS FOR THE EVALUATION OF *Digitalis purpurea*. J. M. Rowson and F. J. Dyer.

15. SOME FURTHER STUDIES ON TUBERCULOSTATIC COMPOUNDS. E. M. Bavin, D. J. Drain, M. Seiler and D. E. Seymour.

16. FURTHER ASPECTS OF THE PHARMACOLOGY OF PARAAMINOSALICYLIC ACID. E. M. Bavin and Barbara James.

17. ANALGESIC AND ANTIPYRETIC PROPERTIES OF SOME DERIVATIVES OF SALICYLAMIDE. E. M. Bavin, F. June Macrae, D. E. Seymour and Pamela D. Waterhouse.

Wednesday Morning, September 3

18. NEOVITAMIN A AND VITAMIN A ALCOHOL IN COMMERCIAL FISH-LIVER OILS AND VITAMIN A CONCENTRATES. Edmund Hayes and Margaret A. Petit-pierre.

19. SOME OBSERVATIONS ON THE DETERMINATION OF VITAMIN A IN COD-LIVER OIL. R. V. Swann.

20. THE STABILITY OF VITAMIN A ALCOHOL IN AQUEOUS AND OILY MEDIA. C. L. J. Coles and D. F. W. Thomas.

21. THE ASSAY OF PENICILLIN USING PENICILLINASE. A. Royce, C. Bowler and G. Sykes.

22. PRELIMINARY OBSERVATIONS ON THE STABILISATION OF PENICILLIN SOLUTIONS WITH HEXAMINE. R. J. Hobbs, J. L. Livingstone, J. Reece and W. A. Woodard.

23. BACTERIAL SURVIVAL IN SYSTEMS OF LOW MOISTURE CONTENT. IV. EFFECTS OF INCREASING MOISTURE CONTENT ON HEAT RESISTANCE, VIABILITY AND GROWTH OF SPORES OF *B. subtilis*. Kenneth Bullock and Alan Tallantire.

24. THE APPLICATION OF INFRA-RED HEATING TO PHARMACEUTICAL PRODUCTS. PART I. PRELIMINARY INVESTIGATION. PART II. DRYING OF GRANULES. H. W. Fowler.

25. THE WATER RETENTION COEFFICIENT OF SURGICAL DRESSINGS. R. Maxwell Savage, D. Maxwell Bryce and J. H. Elliott.

An additional Science Session will be held if necessary in the afternoon.

Friday Afternoon, September 5

26. THE USE OF SURFACE ACTIVE AGENTS IN PHARMACEUTICAL PREPARA-

TIONS. THE EVALUATION OF EMULSIFYING POWER. J. R. Cockton and J. B. Wynn.

27. THE ASSAY OF BACTERIAL PYROGENS. M. Dawson and J. P. Todd.

28. A SIMPLE APPARATUS FOR THE DETERMINATION OF BLOOD CLOTTING-TIMES AND ITS APPLICATION TO THE ASSAY OF HEPARIN. D. Maxwell Bryce.

29. COMBINATION OF MERCURY DIURETICS WITH 2:3-DIMERCAPTOPROPANOL (BAL). THE EFFECT ON DIURETIC ACTIVITY AND TOXICITY. Eileen I. Short. With a NOTE ON THE PREPARATION OF THE COMPOUNDS OF MERCURIAL DIURETICS WITH BAL. Thomas M. Sharp.

Symposium Session

Friday Morning, September 5

The subject for discussion will be:—

RECENT DEVELOPMENTS IN THE PHARMACY OF ANTIBIOTICS.

The discussion will be opened by Messrs. W. A. Woodward, W. Trillwood and J. O. Davidson.

Galley proofs of the science papers listed above, including the papers to be read by the opening speakers at the Symposium Session, will be available a few days before the Conference. Members who are attending the Conference and who would like to receive copies of the papers are asked to communicate with the Secretaries, 17 Bloomsbury Square, London, W.C.1, enumerating those papers in which they are specially interested. The omission of any papers from those despatched will mean that they are not yet available. Applications must be received not later than August 15.

NATIONAL PHARMACEUTICAL UNION

MEETINGS of the directors of the Chemists' Defence Association and of the Executive committee of the National Pharmaceutical Union were held in London, on July 23, Mr. D. W. Hudson in the chair. THE CHAIRMAN referred to the death of Mrs. W. H. Clubb, Liverpool (widow of the chairman of the N.P.U. executive 1931-32). The secretary was asked to send a letter of condolence to Mr. G. L. Clubb (now secretary of the Liverpool Pharmaceutical Committee and N.P.U. Branch).

Western By-election

THE SECRETARY reported that two nominations had been received for the western division 1 by-election:—T. Glynne Anwyl, Rhyl, and Gwilym H. Hughes, Colwyn Bay. Voting papers had been issued on July 16 and were returnable up to 12 noon on July 30. Results would be declared on July 31. Reports of meetings of the accounts, publications and price list, business services and Central N.H.S. (Chemist Contractors') committees were received.

THE LOCAL ORGANISATION OFFICER submitted his report upon work undertaken since the previous meeting. Speakers were appointed to address branch meetings at Dartford, Hounslow, Leeds, South-west London, Wallasey and West Ham. A report on progress made with proposed area meetings to be held in Cambridge and Windermere on September 21 and October 19 respectively was also received. THE SECRETARY reported that the employers'

side of the Retail Pharmacy Joint Industrial Council had met on July 3, followed by a meeting of the full council. Negotiations had been resumed on demands made by the trade union side for increases in minimum rates of remuneration for pharmacists, unqualified assistants, and shop assistants. A settlement had not been reached and the discussions were being resumed on July 30.

THE CHAIRMAN submitted a report upon discussions between representatives of the Council of the Pharmaceutical Society and of the N.P.U. executive held on July 21. It was decided to leave that item on the agenda for future meetings. THE SECRETARY reported that dissatisfaction had been expressed by individual members and from a number of Pharmaceutical Committees at the new classification of medicament groups adopted in the National Formulary. THE CHAIRMAN stated that the possibility of publishing two editions of the N.F., one for prescribers and the other for dispensers was discussed and left in hand for further exploration. It was decided to hold a conference of N.P.U. branch representatives in February 1953.

First Month of Levy

The committee reviewed the first month's working of the levy scheme in the light of reports from Pharmaceutical Committees and individual contractors. The drop in numbers of forms and prescriptions, as compared with June 1951, had been most marked in the industrial areas.

The ratio of prescriptions to forms and quantities of medicines ordered had increased. In some areas substantially fewer prescriptions for children's medicines had been presented. The most significant decrease had been in numbers of prescriptions for elastic hosiery. Contractors had reported cases of inability to collect the levy. Receipts had been issued to approximately 5 per cent. of patients (in some areas 20 per cent.). Many old-age pensioners appeared to be under the impression that they were automatically entitled to recover the charges. The main abuse of the scheme was that some doctors were ordering medicines for two or more patients on one form. The potential danger involved in that type of prescribing, especially where infants and children were concerned, would be taken up with the doctors' representatives. There appeared to have been some difficulty, especially in the London area, about charges for drugs supplied to patients in institutions. The Ministry of Health had subsequently ruled that for "bulk" prescriptions the name of the Institution should be entered on the receipt form (EC 57) in place of a patient's name. The preliminary sorting of container inquiry forms had been put in hand. It appeared that fewer containers were being returned since June 1.

Drug Tariff

The committee had decided not to examine any further proposals for revision of Drug Tariff basic quantities for tablets, etc., until after discussions had taken place with the Ministry and agreement had been reached on the proper basis on which "normal" buying quantities should be assessed. Further consideration had been given to proposals for revision of remuneration for elastic hosiery and trusses and arrangements made for representatives of the committee and of the Surgical Instrument Manufacturers' Association to meet those of the Ministry of Health. The committee had agreed to advance notice being given in the July Drug Tariff to the addition to the schedule of appliances of rayon lint (as from September 1) and of the modern type of vaccination pad. THE SECRETARY reported on progress made in securing final details required by the consulting accountants for completing a case which was being submitted to the management side of the Pharmaceutical Whitley Council in support of the claim for increased remuneration.

Thirty-seven persons and firms who had joined the Union since the previous meeting of the Executive committee were formally elected as members.

NEWCOMER'S NOTEBOOK

12.—Poisons Board

SET up under the Pharmacy and Poisons Act, 1933, the Poisons Board is an advisory committee whose original functions were to prepare and submit to the Home Secretary a list of substances to be treated as poisons for the purposes of the Act, and to assist the Home Secretary in making rules regarding the sale, supply, storage and transport of poisons.

The Poisons List is in two parts, the first of which consists of poisons that are not to be sold except from registered premises by an authorised seller of poisons (generally speaking, a chemist) and the second, of poisons that may only be sold from registered premises by an authorised seller or a listed seller of poisons (i.e., a person whose name is included in a list kept by a local authority).

The poisons in part II are, generally speaking, those that are commonly used other than for the internal treatment of human ailments, and it is so that the public may have adequate facilities for obtaining them that they are included in that part of the list. Those poisons are also subject to the requirements of the Act and Rules. The current Poisons List is contained in Poisons List Order 1950 as amended by the Poisons List Order 1951.

The Poisons Rules relate mainly to the manufacture of pharmaceutical preparations containing poisons and to the sale (wholesale or retail), the supply, storage, transport and labelling of poisons and to the containers in which they may be packed. The Rules now in force are the Poisons Rules 1949 as amended by the Poisons Rules 1950 and 1951.

The Home Secretary, assisted by the Board, is the central authority in matters relating to poisons, and through that authority all amendments to the Poisons List and Poisons Rules are made.

CONSTITUTION:—The Board has sixteen members, though the Home Secretary may appoint not more than three additional members.

PRESENT MEMBERS (with appointing authority shown in parentheses):—Messrs. Bertram Reece (chairman), F. R. Thornton, R. A. E. Galley (Home Secretary); Dr. J. M. Johnston (Secretary of State for Scotland); Dr. W. P. Kennedy and Mrs. J. A. Hauff (Minister of Health); Mr. G. T. Gimingham (Ministry of Agriculture and Fisheries); Dr. J. R. Nicholls (*ex-officio* as Government chemist); Messrs. B. A. Bull, W. S. Howells, H. N. Linstead, C. W. Maplethorpe, and H. Noble (Pharmaceutical Society); Dr. C. A. Keele (Royal College of Physicians of London); Dr. D. M. Lyon (Royal College of Physicians of Edinburgh); Professor D. Campbell (General Medical Council); Mr. G. Roche Lynch (Council of the Royal Institute of Chemistry); Mr. F. Gray (British Medical Association). Secretary: Mr. R. P. McBride (Home Office).

STATEMENTS ON ETHICS AND ASSISTANTS

THE Council of the Pharmaceutical Society has issued its draft revised statement on matters of professional conduct mentioned by the president at the annual meeting 1952 (*C. & D.*, May 31, p. 739) and a report on assistants in pharmacy, both of which are to be discussed at the Branch Representatives' meeting at Nottingham on September 3.

The former is intended for preliminary discussion only and will be available for discussion by the Branches during the 1952-53 session. The views expressed are to be considered by the Council and a final draft will be submitted for adoption at the Society's 1953 annual meeting. The following is a summary of the statement:—

Public Interests Stressed

1. Standards of professional conduct for pharmacy are necessary in the public interest.

2. The public are entitled to expect not only willingness and ability to supply commonly required items from stock but also to supply as soon as possible any unusual article or to refer such demand to an appropriate source of supply. Rota arrangements should be observed.

3. Accommodation should be sufficient in size and services, the stock, equipment and staff adequate, and the premises maintained in a satisfactory condition.

4. The premises should be dignified in appearance and reflect the professional character of pharmacy. Articles other than medicines and medical and surgical appliances and related articles should not be displayed or visibly stored so as to detract from this effect.

5. Failure on the part of the owners of a pharmacy to provide necessary facilities or any obstruction of the pharmacist in charge in the execution of his duty should be taken into account and will be regarded as a failure on the part of the owner to observe the standards in question.

6. A pharmacist should not act as a "cover" for an unqualified person.

7. A pharmacist should not be associated with the conduct of a drug store.

8. There should at all times be a readiness to assist colleagues with information or advice.

9. A pharmacist should do nothing to cast doubt upon the ability or integrity of his fellow pharmacists.

10. The dispensing of medicines should not be advertised. This includes not only direct references to such matters but also the use of general terms such as "pharmaceutical services" and the words "dispensing chemist." The use of the term "dispensing chemist" simply as a personal description on the fascia or other appropriate position on a pharmacy, on labels or business stationery, in telephone and other directories, or in similar ways not normally regarded as

advertising, is not affected. A notice stating that dispensing under the National Health Service is carried on there may be exhibited at any premises.

11. Any necessary announcements as to dispensing services available in a district should be issued by the local Branch of the Society or other official body.

12. The offer of a reduced price, dividend, prize, gift or special service in relation to dispensing services is regarded as advertising.

13. Pharmacists should co-operate with medical practitioners in all matters of joint concern.

14. Prescriptions should not be discussed with patients or others in such a manner as to impair confidence in the prescriber.

15. Whenever possible the authority of the prescriber should be obtained for any substitution of ingredients in a prescription.

16. A pharmacist should not place himself in a position of business obligation to a doctor or so act as to suggest that he has done so.

17. A pharmacist should not associate with a medical practitioner in the formulation, preparation and marketing of proprietary products prescribed by the medical practitioner.

18. A pharmacist should not recommend a particular medical practitioner unless specifically asked to do so.

19. There should be no exhibition of or reference, by way of advertisement, to contraceptives in a pharmacy other than an authorised notice that articles approved by the Family Planning Association or other body approved by the Council are sold.

20. Names of substances in the British Pharmacopoeia or British Pharmaceutical Codex should not be applied to substances of a different composition.

21. No pharmacist should allow others to use in connection with the distribution to the public of any medicine, his name, qualification, address or photograph.

22. No display material either on the premises, in the Press or elsewhere should be used in connection with the sale to the public of medicines or medical appliances which is undignified in style.

23. No article or preparation advertised to the public in respect of which display material of a kind mentioned in paragraph 22 is used should be exhibited in a pharmacy.

"Prescription" Preparations

24. Articles or preparations which in the opinion of the Council should be supplied only on prescription should not be supplied otherwise.

25. The Society's coat of arms should not be used for business purposes.

26. Orders for drugs and medicines should not be solicited from door to door.

27. A drug or medicine likely to cause addiction or other form of abuse should not be supplied when there is reason to suppose that it is required for such purposes.

28. Articles for medicinal use designated by the Council as undesirable should not be sold.

29. Specimens for pregnancy diagnosis should only be accepted through a medical practitioner.

Assistants in Pharmacy

The following is a summary of the report on pharmacy assistants:—

1. Recent developments such as the National Health Service, the increased requirements for qualification as a pharmacist, and the investigation of manpower needs have caused the subject of the unqualified assistant in pharmacy to be considered by the Council as one which has reached a stage when decisions should be taken. It may well have been that assistants other than those intending to proceed to qualification were employed in the early days of the Society, but it seems evident that official policy in the Society aimed at regulating the employment of assistants on the basis of their ultimately qualifying as pharmacists.

2. After the Pharmacy Act, 1868, which adopted the assistants' examination as the standard for qualification as a chemist and druggist, further attempts to regulate assistantship appear to have been abandoned. The time spent as an assistant by the pharmacy student is today usually so short that it plays no significant part in meeting the need for assistants.

Assistants Classified

3. At present assistants fall into the following classes: (1) persons who have been apprenticed with a view to qualification but have given up the intention; (2) persons who have been engaged without the intention of qualifying and with no definite objective; (3) persons holding the certificate of assistant in dispensing of the Society of Apothecaries; (4) Service-trained personnel; (5) persons accepted as apprentices or trainees with a view to making a career as assistants in the firm engaging them. The scope of work to be done by assistants and the relation between the numbers of assistants and of pharmacists in any establishment are left to the discretion of the employer. The absence of guidance on these matters is in the Council's opinion unsatisfactory, particularly where, as in hospitals, there is a lay employer, and the Council consider that the regulation of the conditions under which assistants are employed is desirable and necessary.

4. The employment of assistants to pharmacists is acknowledged by both law and custom and the Council do not regard it as necessary to argue the general case for their employment. They consider, however, they should make clear what class of assistant they have in mind and why they think such a class is necessary. The trend of pharmaceutical education and practice has been away from such an intermediate class and its revival is neither practicable nor desirable as a solution of the problem of assistantship, though this is not to say that more practical experience before qualification might not be an advantage.

5. The kind of assistantship which the Council have in mind fits in with existing practice where it is, or becomes at an early stage, an end in itself and remains a permanent form of employment. Modern developments have made assistants both less and more important, since they have at the same time (1) widened the gap between the pharmacist and his assistant and emphasised the need for control and supervision, and (2)

provided more of the type of work for which the latter is suited. The employment of assistants can only be satisfactory if based upon two principles: one that they are adequately trained in and have shown by examination their capacity to undertake the work, the other that their work is controlled and limited to its proper sphere by the exercise of adequate supervision by pharmacists.

6. The needs of the situation can best be met by a class of trained and examined assistants for general purposes who will be able to work, either at the counter or in the dispensing department. Such assistants may be appropriately called "pharmacy assistants."

7. The creation of a class of trained assistant would, by giving assistantship a status and career value, attract suitable persons who would otherwise not consider the work worthwhile.

8. The work of assistants is essentially practical and their training and examination should be based on that fact. The Society should assume the responsibility for the establishment of conditions which will ensure that the training and examination are so adapted, and should assume the responsibility for the maintenance of adequate control and supervision of assistants, including the number employed in relation to qualified persons.

9. There are other quarters in which an interest in the future of assistants is being taken and it seems clear that in connection with the hospital service decisions on the matter will not long be delayed. If the Society does not act there may be developments over which the Society has no control and which may be unwelcome.

10. The regulation of the conditions under which assistants are employed as outlined in the report will improve the status of pharmacy, and enable the Society to exercise its influence in a field where it is the body primarily concerned, and the Council propose to proceed accordingly.

N.H.S. STATISTICS

A MIDDLESEX Pharmaceutical Committee's report published recently shows that payments on account were made during the year ended March 31, for 11,684,211 prescriptions. Doctors' lists contain an estimated 2,410,537 names and there are 731 premises on the pharmaceutical list undertaking dispensing. Rota duty payments during the year amounted to £13,472. In the year ended April 1, 38 test prescriptions were taken. Forty-two cases were considered by the Pharmaceutical Service Committee. Six cases were dismissed, warnings were issued in five, monetary penalties imposed in three, and the contractor's attention was drawn to the discrepancy in eight cases. Six of the cases arose out of miscellaneous complaints. The Committee has "noted with alarm a larger number of premises remaining open after the normal closing hour, and urges contractors to close at 6 p.m. except when on rota duty."

TRADE NOTES

Holiday Closing.—The works of Thornton & Ross, Ltd., Linthwaite, Huddersfield, will be closed from Friday evening, August 8 to Monday morning, August 18.

Same Colour, New Design.—Genatone, Ltd., Loughborough, Leics, are introducing newly designed packs of Sanatogen in the product's three sizes. The packs



retain the established yellow colour, but the lettering and design have been re-styled. Tests in the north-east of England have shown that the packs have a 60 per cent. better display value.

Sales Hint.—Thornton & Ross, Ltd., Linthwaite Laboratories, Huddersfield, suggest on another page a means of demonstrating the effect of their Zoflora permed disinfectant.

Adrenaline Cream.—Details of a range of packs of adrenaline cream are given by the makers, Howard Lloyd & Co., Ltd., 11 Waterloo Place, London, W.1, on other pages.

New Sales Plans.—Details of new sales plans adopted by Potter & Clarke, Ltd., River Road, Barking, Essex, are given on other page. Every chemist in Britain could receive details of the plans shortly by post.

At Helsinki.—Parke, Davis & Co., Ltd., Moulson, Middlesex, have been asked by the medical office of the Olympic Games to send medical supplies (Chloromycetin) to the headquarters of that office. They are the first non-Finnish organisation to receive such a request.

Gift Tabs and Seals.—The 1952 "gift-tag" catalogue of P. P. Payne & Sons, Ltd., Gaydon Road, Nottingham, offers many new designs for tags and seals, including

folded and novelty tags. Among "special occasion" items are designs for Father's and Mother's days and a paper for Easter.

U.K. Sales Agents.—Chemicals Trading Co., Ltd., 102 Bishopsgate, London, E.C.2, have been appointed sole sales agents for the United Kingdom of the compounds, made from triglycerides of natural fatty acids and suitable for the manufacture of suppositories, made by Imhausen & Co., G.m.b.H., Witten, Western Germany.

Isoniazid Supplies.—WARD, BLENKINSOP & Co., LTD., Henrietta Place, London, W.1, are supplying isonicotinic acid hydrazide under its recommended non-proprietary name isoniazid.—PHARMACEUTICAL SPECIALITIES (MAY & BAKER), LTD., Dagenham, Essex, are also issuing the preparation similarly in tablets each containing 50 mgm. in containers of 500.

New in Toilet Lines.—MAX FACTOR HOLLYWOOD & LONDON (SALES), LTD., 16 Old Bond Street, London, W.1, are issuing a velour face-powder puff in three shades: peach, pink and blue.—YARDLEY & Co., LTD., 33 Old Bond Street, London, W.1, have introduced their Yardley lavender perfume in solid non-spillable form under the name Yardley crystallised lavender.—D. & W. GIBBS, LTD., 7 Bridewell Place, London, E.C.4, introduced on



July 28 new pyramid packs of their Californian poppy perfume. — WESTBROOK LANOLIN Co., Bradford, Yorks, have issued a new pack of their foundation cream in a pink and cream tube.—NOMA COSMETICS, LTD., Harlequin Avenue, Brentford, Middlesex, are to launch their "White Rain" shampoo in mid-September.

Books for Students.—On other pages BAILLIÈRE, TINDALL & COX, LTD., 7 Henrietta Street, London, W.C.2, give details of a number of books for pharmaceutical students which they publish.—W. & G. FOYLE, LTD., 119 Charing Cross Road, London, W.C.2, give details of service in

supplying new and second-hand books.—**OXFORD UNIVERSITY PRESS**, Amen House, London, E.C.4, give details of a textbook on penicillin by M. E. Florey, M.D., which they publish.

Educational Colour Films.—Cellucotton Products, Ltd., 33 Aylmer Parade, London, N.2, demonstrated to the Press recently two ten-minute, Technicolor, 16-mm. cartoon films made by Walt Disney entitled "How to Catch a Cold," and "The Story of Menstruation." The former shows what precautions should be taken by potential and actual sufferers from the common cold. The latter briefly explains the menstrual cycle and disposes of popular erroneous beliefs on the subject. Both films are expected to be available for distribution in September or October.

"Treatment Trio" for the Nails.—Revlon International Corporation, 61 Grosvenor Street, London, W.1, have introduced under the name Treatment Trio a basic beauty treatment for the nails. It contains a jar of nail cream, a bottle of Prolon base coat and a bottle of nail enamel in a pale shade. The base coat is included to smooth out surface irregularities, help prevent stain, and act as an adhesive between nail and enamel. Messrs. Revlon have also introduced Aquamarine soap, a soap "as near neutral and free from alkalis as possible."

New Medical Preparations.—CIBA LABORATORIES, LTD., Horsham, Sussex, introduce on August 1 Femandren linguets containing methyltestosterone, 2.5 mgm., and ethinylœstradiol, 0.005 mgm., formulated in tablets for sublingual absorption. They are indicated in menopausal disturbances, dysmenorrhœa, pre-menstrual tension and

senile and post-menopausal osteoporosis.—Tryptar brand of trypsin has been used successfully in U.S.A. in sixteen cases of debilitation in thoracic empyema. The manufacturers, **THE ARMOUR LABORATORIES (ARMOUR & Co., LTD.)**, Linds Street, London, E.C.1, state that at present the product is being supplied to hospitals only in Britain.—**BAYER PRODUCTS, LTD.**, Africa House, Kingsway, London, W.C.2, announce elsewhere the introduction of Diesed, a tablet containing methyl amphetamine and Luminal.—**ALLEN & HANBURYS, LTD.**, Bethnal Green, London, E.2, have introduced a 10-dose multi-dose container of Scoline containing 50 mgm. of succinylcholine chloride per dose.

Courses for Pharmacy Students.—Educational institutes which give in this issue details of courses for the Intermediate Qualifying examinations of the Pharmaceutical Society include: Bradford Technical College (both examinations); Brighton Technical College (both examinations); Bristol College of Technology (both examinations); Cardiff College of Technology and Commerce (both examinations); Dundee Technical College (both examinations); Harris Institute, Preston (Intermediate); Heriot-Watt College, Edinburgh (both examinations); Huddersfield Technical College (Intermediate); Monmouthshire Technical College (Intermediate); Northern Polytechnic, London, N.7 (Intermediate); Portsmouth Municipal College (both examinations); Plymouth and Devonport Technical College (both examinations); Rotherham College of Technology (Intermediate); Wolverhampton and Staffordshire Technical College (Intermediate). The University of London provides only degree courses.

C. & D. RETAIL AND DISPENSING PRICE LIST

THE following price changes have been notified (for certain wholesalers' prices to tailors, see C. & D. Supplement, July 5, p. xxxiv):—

SURGICAL DRESSINGS

BANDAGES				1 in.	1½ in.	2 in.	2½ in.	3 in.	3½ in.	4 in.	6
				s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s.
White open weave B.P.C. (unwrapped) ... 6 yd.				0 6	0 7½	0 10	1 0½	1 3	—	1 8	2
Domette, B.P.C. ... 6 yd.				—	—	—	3 1	3 8	—	4 10	—
Flannel, B.P.C. ... 4 yd.				—	—	—	3 5	4 1	—	5 5	8
Flannel, B.P.C. (unwrapped) ... 6 yd.				—	—	4 0	5 10	6 0	—	8 0	—
					1 oz.	2 oz.	3 oz.	4 oz.	6 oz.	8 oz.	1 lb.
					1 yd.	2 yd.	3 yd.	4 yd.	6 yd.		
					s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s.
LINTS: Absorbent, B.P.C. ...				1 2	2 2	—	3 4	—	6 7	12	
Boric, B.P.C. ...				No. 2	No. 4	—	No. 8	—	No. 16		
				1 2	2 3	—	3 6	—	6 10		
GAUZE: Absorbent, B.P.C., 36 in. wide ...				½ yd. 7d.	0 11	—	2 3	—	4 3	—	

PACKAGES, PRODUCTS AND SALES AIDS



Nail-varnish, applicator and lipstick in a "Paint-the-town-pink" outfit by Revlon International Corporation, 61 Grosvenor Street, London, W.1.



profil chlorophyll lozenges by Thomas Kerfoot & Co., Ltd., Vale of Bardsley, Lancs (see C. & D., line 21, p. 837).



display outers for Dylan fabric and carpet dyes and Dylan colour remover (Maybourn Products, Ltd., Westow Street, London, S.E.19).



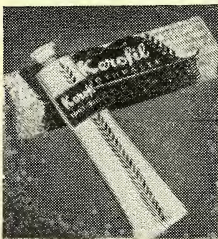
"Window" display card adopted for the Nu-angle tooth-brush ("the tooth-brush with the right tilt to its head") by the manufacturers, Addis, Ltd., The Brushworks, Hertford.



Window display for Lucozade glucose drink using material available from Lucozade, Ltd., Brentford, Middlesex.



"Family" of cut-out showpieces for Tek tooth-brushes by Johnson & Johnson (Great Britain), Ltd., Slough, Bucks.



Left: Kerofil tooth-paste (Thomas Kerfoot & Co., Ltd., Vale of Bardsley, Ashton-under-Lyne).

TOOLS, PLANT AND EQUIPMENT

Anodising Small Metal Parts.—Scrib Ltd., have built and equipped a factory at Lockfield Avenue, Brimsdown, Middlesex, for the anodising of small aluminium articles, such as lipsticks, to give them a "gold," "silver," or coloured finish.

Low-priced Water Heater.—A gas water-heater of unconventional design is being manufactured and marketed by E. Bodley, 53 Museum Street, London, W.C.1, at a modest price. The heater is long and slim and protrudes only 4 in. from the wall. It weighs 2 lb. and is made of pure aluminium, finished ordinarily in white enamel.

Wood Engraving Tool.—The Acru electrically heated wood-engraving pencil, manufactured by Acru Electric Tool Manufacturing Co., Ltd., 123 Hyde Road, Ardwick, Manchester, 12, enables initials, etc., to be burn-engraved on wooden handles, etc., or embossed with foils on materials as hard as glass or as soft as rubber. It can also be used for soldering.

Light and Movement for Display.—Time Switches & Instruments, Ltd., 5 Victoria Street, London, S.W.1, manufacture a time switch for automatically switching on or off display lighting at regular intervals; an electrical motor-driven flasher for animating small signs or drawing attention to special articles in a display; and a display turntable giving three rotations per minute; load: up to 30 lb.

Locating Staff.—To make contact with a member of a works staff whose duties take him from one department to another there is available the Dicto-call system, under which the switchboard operator speaks into a microphone and speakers throughout the premises relay the message. The system is installed by Dictograph Telephones, Ltd., Abbey House, Victoria Street, London, S.W.1.

Instruments for Process Control.—Sundvic Controls, Ltd., 10 Essex Street, London, W.C.2, have made arrangements to manufacture and sell the range of pneumatic process control instruments manufactured by Moore Products Co., Philadelphia, U.S.A. The range includes pneumatic controllers, indicators, differential pressure transmitters, liquid level transmitters and controllers, thermometers, flow transmitters, valve positioners, manual control stations, relays, pilot valves, pressure regulators, etc.

Watchman's Clock.—Carrying a Blick watchman's clock, a watchman keeps a record of his rounds. Station boxes to which engraved keys are securely attached are installed at suitable points on the premises. The watchman inserts the key into the clock and continues on his round. Each recording is printed on a calibrated tape inside the clock, which is locked and cannot be tampered with. Before going off he hands in the clock, from which the records are extracted by the holder of the key and pasted into a special record book. The makers are Blick Time Recorders, Ltd., 188 Grays Inn Road, London, W.C.1.

Lamp for Fluorescence Analysis.—The Chromatolite lamp manufactured by Hanovia, Ltd., Slough, Bucks, has been designed, under advice from Dr. E. R. Holiday, B.M., B.Ch. (Medical Research Council spectrographic unit) chiefly for the fluorescence examination of chromatograms but serves also as a portable unit for fluorescence investigations in general. The source is a low-pressure mercury resonance tube that generates over 80 per cent. of its output at the wavelength of 2,537 Angstrom units. For certain investigations this band detects spots that are invisible under long-wave fluorescence. The 24 in. tube is bent into elongated U-form, both terminals being contained in a standard valve connection. It operates within a metal box 17½ in. long, 3 x 2 in. in section, carrying the special fluorescence filters along one side.

Hot-air Steriliser.—Surgical Equipment Supplies, Ltd., Westfields Road, Acton, London, W.3, have added a newly designed electric hot-air steriliser (Cat. No. 3018) to their range of equipment. The steriliser has a chamber capacity of 10 x 10 x 18 in. deep. A motor-driven fan ensures even temperature throughout the chamber, and the steriliser is fitted with three deep perforated removable trays, making it ideal for the sterilisation of syringes in bulk. The temperature is thermostatically controlled (range 93° to 260°C.). A pilot light in the circuit indicates when the steriliser is operating, and two vents are fitted to the top of the instrument for check thermometer readings. The maximum loading of the steriliser is 1,200 watts. The steriliser is supplied for bench mounting, or with stand; the standard finish is silver-grey enamel, with all bright parts heavily chromium plated.

"Every plant has its parasites, and we harvest only what they are pleased to leave us."—EUGENE ROUX.

PHYTOPHARMACY

By René Fabre

(Dean of the Faculty of Pharmacy of Paris. Member of the Académie Nationale de Médecine)

PHYTOPHARMACY is the science which is concerned with the study of products intended for the protection and improvement of plants, and all comparable products with the exception of fertilisers. Its principal aims, therefore, are the following:

1. To determine the efficacy and mode of action of the product examined and to study its relationship with diseases caused by insects, cryptogams, deficiencies, etc.
2. To know the exact action of such product on the plant and on its biological equilibrium.
3. To define, in conjunction with human and veterinary medicine, the ratio of toxicity of the product, for various living creatures.
4. To formulate the conditions and methods for its use, specifying its strength for various purposes and its value when used as a spray, powder or liquid, from the air, etc.

In a word, it is the business of the science of phytopharmacy to determine the efficacy and method of using these products, their influence on the plants to be protected against the harmful action of pests, and finally to ascertain their possible poisonous action on the plants.

The ravages of various pests are the cause of the destruction of at least 10 per cent. of our crops. This loss represents an important amount in dollars or in produce of infinite value to humans, especially at present when there is such a regrettable inequality in the distribution of foodstuffs among the populations of the globe. The Colorado beetle is threatening the potato with total extinction; the *Phylloxera*, now conquered, has given way to the *Pyrallis*, *Cochylis* and *polychrosis*, deadly enemies of the vine; the olive fly and the fly infesting citrus fruits do considerable damage in the Mediterranean regions; and we must not forget the larvæ of numerous insects which deprive us of an important part of our crops of edible fruits. The seriousness of the problem is, therefore, to be seen in the facts and, faced with such a sombre picture, one would think that man would have mobilised all his strength and intelligence against such relentless enemies and that the whole world would have been organised to wage a ruthless war. In fact, however, we must admit that defensive reaction against these pests has been

relatively recent, and frequently of a desultory character. Praiseworthy and fruitful efforts have been made in a number of agricultural countries since the end of the nineteenth century, but the information contained in the records of these enemies of our crops has taken on an international character only during recent years.

Parasitocides According to Life Habits

In the forefront of our preoccupations must be placed the destruction of the parasite by methods based on its life habits so that we may control either the parasite itself or its descendants by striking at the moment when its life cycle renders it specially vulnerable. For the higher animals recourse must be had to poisons such as *Nux vomica*, its alkaloids, tobacco, nicotine, phosphorus, arsenic, etc. As regards invertebrate parasites, of which insects form the most numerous group, the attack is made on the imago as well as on the larva. Substances have been found which possess intense activity, the majority (pyrethrines, rotenone, DDT, HCH, etc.) not in any way inconveniencing warm-blooded animals. One may even ask oneself whether pharmacodynamic experiments may not eventually lead to the discovery of a certain number of chemical compounds having a specific action on certain animals and, at the same time, possessing no harmful action on others of an allied family.

Moreover, though the absolute harmlessness of the parasiticide is of first importance to man and the higher animals, we must not forget that it depends partly on whether it has completely disappeared from the fruit or vegetables at the times of collection and consumption. If wetting and fixing agents are necessary, they must not have a vigorous, prolonged action. There should be strict rules to prevent their being used too near to the period of harvesting. Greatest care must be taken not to cause any deterioration in the plant tissues. Only parasitocides that are odourless and tasteless should be used. The research worker who devotes himself to this science must therefore combine a deep knowledge of botany, zoology, biology and toxicology. Here we have an extension of

toxicology which is particularly dear to me, because it steps out of its narrow field and enters the most varied branches of biology, a science which it is imperative to know thoroughly if definite results are desired. At present the subject is taught in France at the Versailles laboratory forming part of the National Centre for Agronomic Research, and by the entomological and pathological stations of the Ministry of Agriculture. Numerous centres for research in phytopharmacy exist also in Agronomic schools and institutes and in the faculties of pharmacy.

Pharmacists' Prerogative

The pharmacist who alone [in France] is qualified to manufacture, keep and dispense remedies for human use, and who exercises control over veterinary pharmacy, has the same prerogative as regards the manufacture of remedies destined for the fight against the parasitic enemies of agriculture. Moreover, although he may leave the task of tracking down the enemy to the agricultural expert he must himself undertake the choice of the remedy to be adopted, the poison and its method of administration. Storage and distribution of poisons are subject, as we know, to legal obligations. It is the pharmacist who is charged with the inspection of stores of agricultural poisons. Being a naturalist, chemist and toxicologist, he lacks none of the knowledge necessary for the fight against the enemies of cultivated plants. Our schools and faculties, encouraged by the Professional Association of Phytopharmacy, have instituted a certificate of studies in phytopharmacy confined to qualified pharmacists and students in their final term who possess serious basic knowledge in the various scientific fields touching this science. It is ratified by an examination bearing on the various parts of the following programme:—

1. LECTURES given by professors of the faculty, deal with the following subjects:

Botany.—Parasitism, principal aspects, voluntary and obligatory, total and partial parasitism. Specificity in parasitism, parasitic phanerogams, anatomic relationship between parasite and host. Sucking insects. Characteristics of parasitic plants. Parasitic fungi and bacteria. Parasitic infection, physiological phenomena of parasitism, morphological and histological malformations caused by parasites (tumours, cankers, "cauldrons," galls, etc.).

Cryptogamy.—Parasites of the vine: downy mildew, white root rot, powdery mildew, ripe rot, anthracnose, sooty leaf. Parasites of cereals: foot rot, bunt, smuts, rusts, ergots. Parasites of the

potato: powdery scab, blight. Parasites of fruit trees: peach-tree leaf curl, bladder plums, crown rot, scab cankers, heart rot. Parasites of forest trees: oak white mildew, partridge wood, red rot, white rot, chestnut-tree blepharospores, rusts of conifers, merulus and damage by *Polyporus*.

Zoology.—The importance of damage caused by insects to cultivated plants and to provisions. Orthoptera: locusts, cockroaches, mole-cricket. Coleoptera: chafers, weevils, seed beetles, blossom weevils, Colorado beetles, click beetles, meal worms. Lepidoptera: *Cochylis*, *Polychrosis* and *Pyrallis* of the vine, harvest moths, cabbage butterflies, codling moth, ermine moth, winter moth. Hemiptera: *Phylloxera*, woolly aphis, mealy bugs. Diptera: destructive gall midges. Nematodes: those parasitic on plants.

Materia Medica.—Study of plants possessing parasiticide properties and the products they supply: tobacco, insecticide pyrethra, rotenone-containing plants, squills.

Galical Pharmacy.—Preparation of pharmaceutical forms suitable for application in use as parasitocides: powders, suspensions, emulsions, emulsifying, wetting and adhesive agents, aerosols. Methods of utilisation.

Chemical Pharmacy.—Parasiticide products manufactured by the chemical industry. Mineral products: Sodium and barium fluosilicates, sodium chlorate, sulphur polysulphides, sulphur anhydride, sulphuric acid, zinc phosphide, calcium, lead, aluminium arsenates. Carbon sulphide and tetrachloride, hydrocyanic acid, calcium cyanamide. Copper sulphate and oxychloride. Caustic soda, potassium permanganate. Kaolin bentonite and other adhesive clays (talc, casein). Organic products: Oils derived from petroleum, ethylene oxide, formal trioxymethylene, sulphonated anthracene oils (carbionileums). Nitrogen derivatives of the phenols and nitrogenated dyes. Hydroxyquinoline, thiodiphenylamine (dibenzotriaz-thiazine). Parasiticide dyestuffs, pyrethrines, rotenones, nicotine, sulphonated terpene alcohols and other wetting agents.

Toxicology and Legislation.—Etiology of poisoning due to the use of fungicidal and parasitocidal products. Study of their toxicity. Methods of detection. Antidotes. Relevant legislation.

2. PRACTICAL WORK:

Cryptogamy.—Examination of infested plants. Diagnosis of parasites.

Zoology.—Examination of infested plants. Diagnosis of parasites.

Toxicology.—Research and determination of strength of phytopharmaceutical products in fruits, vegetables, the atmosphere, urine and the blood.

Methods of application of products. Manipulation. Demonstration of use of material utilised.

Such is the programme of the Certificate of Studies in Phytopharmacy issued by the Faculty of Pharmacy of the University of Paris. By interesting himself in this important problem and by devoting his knowledge and efforts to it the pharmacist will demonstrate once again that he is a true servant in the cause of the health of mankind and that, it seems to me, would be the finest certificate one could hand to the practising pharmacist anywhere.

A COLLEGE WITH AN INTERNATIONAL AIR

TO the Heriot-Watt College, Edinburgh, come students from the four corners of Britain and the world. The pharmacy department, which, since October 1951, has had its headquarters in a new building, has attracted students from the Channel Islands, Shetlands, Switzerland, China and many other countries to Edinburgh for their pharmaceutical education since the Heriot-Watt College embarked upon the full-time training of pharmaceutical students in 1919.

Surge of Students

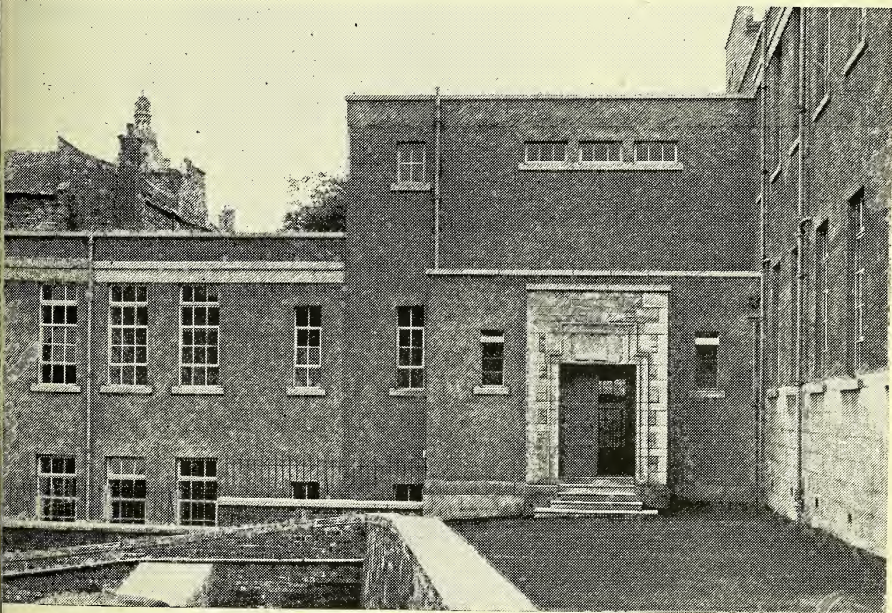
After the 1914-18 war the pharmacy department of the college, which for many years previously had provided evening classes in pharmacy, started full-time day courses to help in coping with the surge of students that the end of hostilities brought about, and to meet an invitation put to it by the Pharmaceutical Society. In the first two sessions there were 105 and 110 students respectively. Since then more than 2,000 students have passed through the department.

At the start of the 1951-52 session,

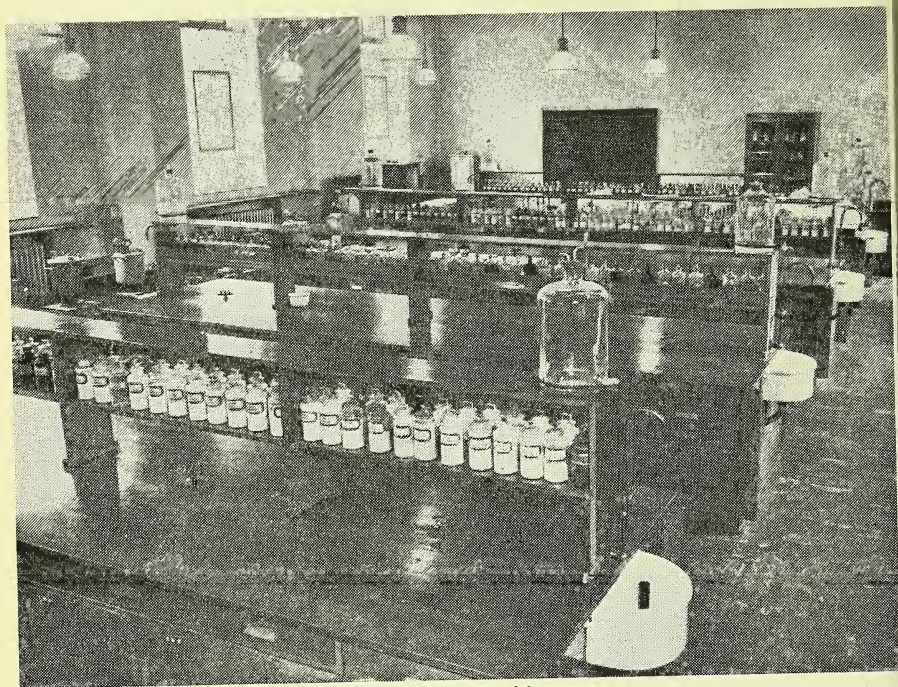
laboratories and lecture-rooms were brought into use in a new building in the Grassmarket. Pharmacognosy and physiology continue to be taught in the main college building in Chambers Street—as do all the subjects of the Intermediate examination of the Pharmaceutical Society.

The new three-story building, which was officially opened by the Earl of Home (Minister of State for Scotland) in April (*C. & D.*, April 26, p. 572) houses two lecture rooms on the ground floor; galenical and pharmaceutical laboratories, plus a room for aseptic work on the first floor; and on the third floor a pharmaceutical chemistry laboratory, a separate weighing room containing £600 worth of new analytical balances, and a research laboratory. A common room for students, staff rooms and storage space are also provided.

Pharmaceutical education in Edinburgh dates back to 1776, when the Royal Public Dispensary was founded by Dr. Andrew Duncan. The school added to its fame under Mr. William Duncan, Ph.C. (no relation to his distinguished predecessor and namesake) who became its principal



Exterior of the new pharmacy building of the Heriot-Watt College, Edinburgh.



The new pharmaceuticals laboratory.

in 1886. In 1924, on his retirement, Duncan selected as his successor Mr. Eric Knott, Ph.C., who upheld the traditions of the School until, in 1935, under an agreement between the managers of the Royal Public Dispensary and the governors of the Heriot-Watt College, the teaching of pharmacy at the Dispensary was transferred to the Heriot-Watt College. Mr. Knott remains a member of the staff of the pharmacy department of the Heriot-Watt College. He is also secretary of the Edinburgh and South-eastern Scottish Branch of the Pharmaceutical Society and a member of the Society's Scottish board of examiners. Promoted for gallantry in the field in the 1914-18 war, he saw service also in the second war of 1939-45.

Head of Department

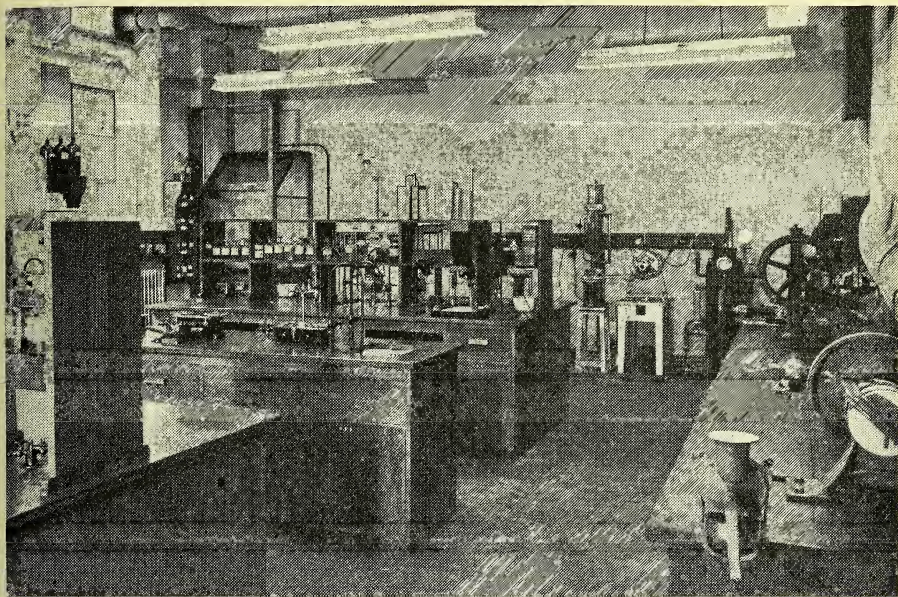
The head of the pharmacy department, Mr. Hugh H. Campbell, A.H.-W.C., B.Sc., Ph.C., F.R.I.C., with an experience in the training of pharmacists dating back to 1920, has a lucid lecturing style that is much appreciated by students. He is a member of the Society's Scottish board of exami-

ners and of the Council of the Royal Institute of Chemistry.

Also on the staff of the department are Messrs. W. J. Blake, Ph.C., A. W. Patterson, Ph.C., D.B.A., W. Pringle, Ph.C., and Miss Joan C. Barnes, B.Sc., Ph.C.

College facilities include a library where £1,000 a year is expended on new books and subscriptions to journals; common rooms for men and women; gymnasium and dining hall. There are a Students' Representative Council and a College Pharmacy Association open to past and present students and to apprentices resident in Edinburgh. The Association was instituted in 1936. Its activities include meetings, sport and works visits.

Edinburgh is, of course, a centre of manufacturing pharmacy. Practically all the morphine, heroin and codeine used in Britain and in many overseas countries is made there, as well as strychnine, aloin and santalin; chloroform and ether have been Edinburgh manufactures from the earliest. The reasons for Edinburgh's development as a centre for the manufacture of drugs of vegetable extraction are often



The new galenical laboratory.

debated. Legend has it that, in the old days, the low duty on spirit in Scotland, as compared with England, was at least partly responsible.

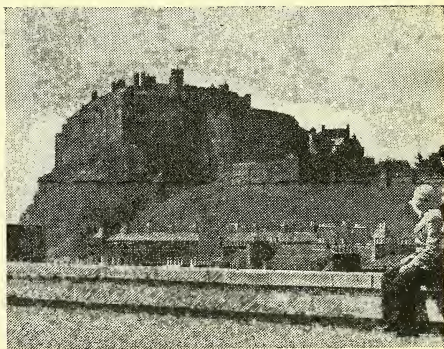
Prizes Awarded

Prizes awarded to pharmacy students at the College include the Duncan Memorial prize (in memory of Mr. William Duncan) for the best student in the Pharmaceutical Chemist Qualifying examination course; the Malpas Memorial prize for the best student in the physics class for pharmacy; and the J. Rutherford Hill Conference prize for the best student in pharmaceuticals.

With the commencement of the session in October, an Associateship of the Heriot-Watt College (A.H.-W.C.) in Applied Pharmacy becomes attainable by students undertaking further study extending over one academic year. For the time being, entrance to the course is restricted to students who have studied for two years at the Heriot-Watt College after passing the Intermediate examination of the Pharmaceutical Society or an examination exempting the entrant therefrom. Intending Associates will be able to choose two of the following subjects:—(a), pharmaceutical analysis; (b), industrial microbiology; and (c), pharmaceutical engineering. The final

examination is being held in June of each year.

A further £300,000 extension to the main college building is under way, and it is expected that, when it is completed, the facilities of the pharmacy department will be further extended. There is, in fact, every prospect that the College will long continue to attract students "frae a' the airts."



Mr. Eric Knott, Ph.C., points to Edinburgh Castle, a unique view of which is seen from the roof of the new pharmacy building.

C.V.B.

CARR'S VITAMIN B₁
PREPARED WHEAT EMBRYO

**A RICH NATURAL SOURCE OF
VITAMINS B and E**

TWO SIZES
1/9 or 3/-

Trade 16/- doz. or 27/- doz.
FREE NON-RETURNABLE CARTONS

From Principal Wholesalers
or from the Manufacturers

CARR'S CEREAL PRODUCTS LTD
CARLISLE

TRAGACANTH

SPECIALISTS IN B.P. POWDER
SAMPLES AND PRICES ON REQUEST
FREUDENTHEIL, SMITH & CO., 16 Philpot Lane,
London, E.C.3
Mansion House 1924 & 6600. Estd. 1826

BLYTON ASTLEY & CO., LTD.

Makers of "Doctor's Catarrh Pastilles", "I.G.T. Safeguards", "Menthells", "Digestells" and a variety of Pastilles and Lozenges offered in bulk or as "own name" packs.

Eagle Laboratories
LOWER BROUGHTON, SALFORD 7, LANCs.

TABLETS MANUFACTURED
to Customers' formulæ

MODERN PLANT · PROMPT DELIVERY
QUALITY AND ACCURACY

GUARANTEED

B.P., B.P.C. & N.F. tablets stocked

G.O. WOODWARD & CO. LTD.
LARKHALL WORKS, NUNHEAD GREEN, LONDON, S.E.15
NEW CROSS 0478

A.....

**THE NEW ANTISEPTIC
LIQUID DENTURE
CLEANSER**

1/9 and 2/9 per bottle

ODEDENT

REGD.

**CLEANS PLASTIC DENTURES
INSTANTLY**

11/6 and 18/- per dozen
(+ ½ tax)

Direct or through your wholesaler :—**THE ODEDENT CO. 49a High Street, Walton-on-Thames**

IS IT A POISON?

For quick and easy reference use
the 'C & D' POISONS GUIDE. Vol 1

Price £1, postage 6d. extra

THE CHEMIST AND DRUGGIST
28 ESSEX ST., STRAND, LONDON, WC2.

Quality
ASPIRIN
TABLETS
IN BULK OR PACKED

The WALLIS LABORATORY Ltd
58, KING GEORGE'S AVE. WATFORD, HERTS.

● WILCOX, JOZEAU & CO., LTD. ●

CACHETS FAIVRE

Dr. Faivre Brand Cachets of

OXYQUINOTHEINE

Supplied in one size only—boxes
of 12.

Retail, 4/1½, Including P.T.
Wholesale, 30/6 per doz., plus
33½ per cent. P.T.

● TELEPHONE: TERMINUS 3088 ●

INFORMATION WANTED

The Editor would appreciate information
about suppliers of the following items:

AGRATIN
VISACIDOL

SUPERLATIF } vacuum flasks
SUPRA
BRONSONOL } powders

NEPTARTIN
DURSOLES

WHITE LION ST.



The CHEMIST AND DRUGGIST

or RETAILER—WHOLESALE—MANUFACTURER
ESTABLISHED 1859

Circulates throughout the Pharmaceutical, Chemical, Drug, Essential Oil, Perfumery, Cosmetic, Toilet Preparation and allied Trades throughout the World

Official organ of The Pharmaceutical Society of Ireland, The Pharmaceutical Society of Northern Ireland, The Chemists' and Druggists' Society of Ireland and of other Chemists' Societies in the Empire.

VOL. CLVIII August 2, 1952 No. 3780

“Comparative Hardships” of Leaseholders and Landlords

UNDER the Leasehold Property Act, 1951, questions have recently arisen as to the position of the tenant of a landlord who requires possession of the premises for his own occupation for trade or business purposes, and proposes to make alterations to premises in order to adapt them to those purposes. The Act entitles a tenant carrying on a retail trade to an extension of his tenancy, but the Court has a discretion in the matter. No order will be made for an extension unless the court, in all the circumstances of the case, considers it reasonable so to grant one.

That discretionary power to grant an extension, however, cannot be exercised where, among other things, the landlord reasonably requires possession in order that the premises, or a substantial part of them may be demolished or reconstructed. Another case in which the court cannot grant an extension is where greater hardship would be caused by granting it. The burden of proving greater hardship, and of the reasonable requirement of the premises for the purpose of demolition or reconstruction, rests on the landlord, and it is a burden that cannot lightly be discharged. The mere fact that a landlord requires possession of the premises for his own occupation, though a factor which the court will take into account in considering the question of hardship, is not an absolute bar to the grant of an extension. It is the fact that possession of the pre-

mises is required for the purpose of demolition or reconstruction).

The question therefore arises whether a landlord, by proving not only that he requires the premises for his own occupation, but also that the premises are to be demolished or reconstructed for the purposes of that occupation, can defeat absolutely the tenant's right to an extension. The type of case generally met with is one in which alterations are to be effected in order to adapt the premises for the purpose of the landlord's business. Alteration of a minor character, such as putting up a partition in a room, or installing w.c.s and wash basins, are not enough. One might go so far as to say that, unless there are substantial structural alterations, such as pulling down portions of internal walls, cutting openings, removing existing staircases, and erecting new ones in some different position or the like, there cannot be a “reconstruction,” and the case must fall outside the relevant paragraph of the Act.

To determine whether the paragraph applies so as to constitute an absolute bar to the tenant's right to an extension of lease, two principal matters must be proved. The landlord must show not only that the proposed work constitutes a “reconstruction” of, at any rate, a substantial portion of the premises, but also that he “reasonably requires possession” for that purpose. Assuming that the work constitutes a reconstruction, what factors bear on the question whether the premises are “reasonably required”? Must the matter be regarded solely from the landlord's point of view, or must consideration be given equally to the tenant's interests? It now appears to be that the matter must be regarded equally from the point of view of both. The tenant is entitled to a limited extension of his tenancy, for one year, and then only until June 1953, and it might be argued that the landlord could easily afford to wait for just that little longer time, particularly bearing in mind that licences for executing the work are not readily granted. Another point that can be advanced in the tenant's favour, if the facts warrant it, is that the landlord can just as easily

occupy the premises for his own business without any reconstruction of the premises at all, slight alterations being sufficient for the purpose. And then the landlord cannot prove that he reasonably requires possession for the purpose of reconstruction, then he (the landlord) is thrown back on the plea of greater hardship, and the odds would be that the tenant would not be deprived of his extension.

Square Meals for Babies

CONCLUSIONS about infant feeding reached by an eminent physician after forty years of children's practice are given by Dr. C. W. Vining (Emeritus Professor of Children's Diseases, University of Leeds) in the "Lancet" (July 19, p. 6725). In briefest outline, they resolve themselves into a belief that the so-called "feeding disorders" in infants are chiefly due to hunger, the result of underfeeding. The marketing of dried milk about thirty years ago, says Vining, almost certainly did more than anything else to reduce infant mortality. "Some ascribed this improvement to the absence of bacteria in the dried-milk feed; but, looking back, it seems to me more likely that the real reason was that for the first time the artificially fed baby was presented with a square meal and a square deal." After advocating, at successive stages of his career, that an infant required $2\frac{1}{2}$ oz. of breast milk or its equivalent for each lb. of body weight; and $2\frac{1}{2}$ oz. for each lb. of expected weight (if progress had been normal) the author is now inclined to let the baby have what he or she will take. Most babies, he declares, will progress satisfactorily on the most diverse types of food, so long as it is adequate in quantity and can be easily taken. Feeding healthy babies with half-cream dried milk is strongly deprecated. Vining's summary of the main causes of vomiting, possetting, infrequent or abnormal stools, "colic," "wind," and excessive crying during the breast- or bottle-feeding period are likely to influence thought on the subject for a long time to come. As will be seen from the ones quoted, they are "straight from the shoulder":—

Underfeeding due to fear of over-feeding
Following the directions set out on the packet

of dried milk ("usually calculated for an infant whose birth weight was $6\frac{1}{2}$ lb."").
Strict adherence to the quantities indicated by academic dictates.
Feeding according to *present* rather than *expected* weight.
Using a bottle open at one end only.
Using a teat which will not allow an easy flow of milk or which collapses in the infant's mouth like blotting paper, either because of age or continual boiling.
Making the feed too hot ("I have twice seen a baby scalded about the neck by the contents of the bottle").
Misinterpreting the symptoms as those of sub-acute gastro-enteritis, and treating and feeding accordingly.

From Want to Plenty

SINCE the beginning of the year there have been many indications that the market for chemicals has turned in favour of buyers. Many commodities which during last year's peak trading were severely rationed to consumers are now freely available. This rapid change of circumstances can be attributed largely to reluctance on the part of the ultimate consumer to purchase for fear that prices will fall (as indeed many have). There is even enough sulphur for present needs, though that position could be quickly reversed if the textile industry returned to its early 1951 level of activity. Salts of metals such as zinc and antimony, which soared after the outbreak of the Korean war, are now dropping back in price. The closing (or near closing) of many overseas markets due to balance of payments difficulties, and the increased production of chemicals by Continental countries—in particular Germany, Italy and France—have created a surplus where once, not so long ago, there was a famine. The present trend should not be looked upon as the harbinger of a general slump, but rather as a return to the *status quo*, whereby in normal times within the industry there is a surplus of production over demand.

Research Increasing

ALTHOUGH the Federation of British Industries has tackled its self-imposed task of reviewing British industrial research and development investigations fairly thoroughly it is unfortunate that it did not subdivide the chemicals group, the largest

in the report, into specialised sections. Little change appears to have taken place in certain aspects of the subjects investigated such as the proportion of manufacturers who are members of research organisations, and the ratio of qualified to unqualified staff in research laboratories. But it is useful to be assured that the chemical industry is progressing soundly in research assuming that the increase in the number of qualified staff employed over the past five years is a measure of research accomplished. Moreover the relative gain of engineers over chemists may

indicate the growing realisation by the industry of the importance of the chemical engineer. It is notable, too, that nearly 90 per cent. of the research appears to have been directed to projects within the companies apart from those resulting from their technical sales services. The scientific instrument industry led all others investigated in increase in floor space devoted to research and development departments. The achievements in research have been made in the face of shortage of trained research workers and financial restrictions that affect expansion programmes.

GUIDE TO EDUCATION in pharmacy and allied professions

How to Become a Pharmacist in Britain

IN order to be admitted to the register of pharmaceutical chemists of the Pharmaceutical Society, a student must undergo academic training and an apprenticeship and pass certain examinations, as outlined in the centre panel. Every student must register. If he has passed, at not more than two sittings, the General Certificate of Education examination in chemistry, physics and biology at advanced standard, or the final or intermediate Bachelor of Arts or Bachelor of Science degree examination or equivalent of any British University (the subjects to include chemistry, physics and biology), he may claim exemption from the Intermediate examination (if the exempting examination were passed

STEP BY STEP

1. Register with the Pharmaceutical Society as a student (fee £4 4s.) submitting proof of having reached an approved standard in general education.
2. Undergo one year's full-time instruction in chemistry, physics and biology in an approved institution.
3. Pass the Society's Intermediate examination.
4. Undergo two years' full-time instruction in pharmaceutical chemistry, pharmaceuticals, physiology and pharmacology, pharmacognosy, and forensic pharmacy in an approved institution.
5. Pass the Society's Qualifying examination.

before December 31, 1952, botany or zoology would be accepted in place of biology). A degree in pharmacy in certain universities entitles a student to exemption from all subjects of the Qualifying examination except forensic pharmacy.

Apprenticeship is taken, under articles, in a retail pharmacy, hospital or manufacturing pharmaceutical laboratory approved by the Society's Council. If taken before the Qualifying exam-

ination its duration is two years; if taken after, one year. The student is entitled, after having passed, or having gained exemption from, the Qualifying examination and having served his apprenticeship, and if over twenty-one years of age, to registration as a pharmaceutical chemist.

QUALIFYING EXAMINATION SYLLABUSES

THE syllabuses for the Pharmaceutical Chemist Qualifying examination under the revised system of education adopted by the Council of the Pharmaceutical Society were made available in November 1950. The details are given concisely below. For those candidates registered as "Apprentice or Student" on and after June 1, 1948, the same syllabus will apply. In the remaining Chemist and Druggist Qualifying examinations for entrants who have had only a one-year course, the examiners are being asked to limit their questions to matters common to the present syllabus for the Chemist and Druggist Qualifying examination and new syllabus.

Pharmaceutical Chemistry

The examination in this subject comprises two written sessions, each of three hours' duration, and one practical session of six hours' duration. The examiners are not precluded from asking candidates oral questions during the practical sessions.

The candidate will be required to have a knowledge of the following:—The principles of physical chemistry treated in an elementary manner mainly with reference to their pharmaceutical application.

The general principles of inorganic chemistry based upon the characteristics of the elements and compounds shown by the periodic relationships and an elementary treatment of valency and the electronic structure of their atoms. An elementary treatment of atomic structure, isotopes, nuclear chemistry, natural and induced radioactivity. A general knowledge of organic chemistry, with particular reference to substances in frequent use in pharmacy. A knowledge of the structure, nomenclature and chemical properties of pharmaceutical importance of the following and such of their derivatives as are in the British Pharmacopœia:—Diphenyl ethane, triphenyl methane, naphthalene, anthracene, furan, pyrole, thiazole, pyrazole, imidazole, pyridine, quinoline, isoquinoline, acridine. The structure of phenanthrene. Chemical synthesis by the more important reagents.

A knowledge of chemistry of the following groups of medicinal organic compounds: sulphonamides, barbiturates, arsenical compounds, local anæsthetics. The general constitution and properties of the fixed oils, fats and waxes of the British Pharmacopœia. The principles involved

in the estimation of the oxygenated constituents of essential oils. A knowledge of the structure and simple chemical properties of terpineol, limonene, carvone, menthol and camphor. The general method employed for the extraction of alkaloid and the methods employed for the elucidation of their structure. The preparation and structure of uric acid, caffeine, theobromine and theophylline. A knowledge of the properties of pharmaceutical importance of vitamins and hormones of the British Pharmacopœia. The general chemistry of the carbohydrates, with a knowledge of the structure, excluding stereochemical considerations, of glucose and methylglucosides, fructose, sucrose, lactose, salicin. An elementary knowledge of the classification and general characteristics of the proteins and of essential amino acids and their relationship to proteins. The principles of analysis as exemplified by the determinations and processes indicated in the practical syllabus.

PRACTICAL

Volumetric analysis. Gravimetric analysis. The quantitative determination of an alkaloid in acid or alcoholic solution. The determination of the acid, saponification and iodine values of fixed oils and fats. The determination of aldehydes in volatile oils. The general methods for the detection and determination of chloride, sulphate, iron, arsenic and lead as impurities. The determination of the melting point of solids readily reducible to a powder and of the boiling point, density, refractive index and optical rotation of liquids. The identification of the functional groups and the preparation of simple crystalline derivatives of organic compounds. The identification or reference to class of organic chemical of the British Pharmacopœia. The qualitative analysis of mixtures of inorganic substances and organic acids and their salts commonly used in medicine. The preparation of simple organic compounds illustrative of the general processes involved in preparing substances included in the theoretical syllabus.

The candidate will be required to bring to the practical examination his original laboratory notebooks, duly signed by the teacher, for inspection should the examiners so desire. These notebooks must be taken away by the candidate at the close of the examination. In the practical ex-

amination the candidate may use any book or books he chooses to bring including his own laboratory notebooks.

Pharmaceutics

The examination in this subject comprises two written sessions and two practical sessions, each of three hours' duration. The examiners are not precluded from asking candidates oral questions during the practical session.

The historical development of pharmacy. The application of physical phenomena to pharmaceutical operations—change of state, systems of two or more components—solutions, dispersions. Pharmaceutical processes and products—preparation of material, solvents, extraction, assay and standardisation, clarification and filtration, including removal of fat, proteins, gums, pectins, tannins, ultrafiltration, stabilisation—maintenance of stability during storage, enzymes. The products of the British Pharmacopœia and the British Pharmaceutical Codex to be used to illustrate the above. The nature and properties of materials used in the construction of pharmaceutical apparatus. Microbiology in so far as it affects the content of this syllabus. Sterilisation and the preparation of sterile medicaments and materials. Disinfectants and antiseptics—methods for valuation of disinfectants. Bacteriostatics and fungistatics. Asepsis in the preparation of sterile products—sources of contamination, aseptic precautions. The preparation, properties and storage conditions of immunological and diagnostic agents of the British Pharmacopœia; the general principles underlying their standardisation. Dispensing practice—ethical codes; the prescription—purpose, property rights; the doses of medicaments of the British Pharmacopœia; dispensing and compounding of medicines; containers; medical gases—containers and apparatus required and its use; equipment and organisation of the pharmacy. The candidate will be required to have such a knowledge of French or German as will enable him, with the aid of technical dictionaries, to translate into English passages from pharmacopœias in that language.

PRACTICAL

The student must be prepared to carry out ordinary pharmaceutical operations, including the making of preparations included in the British Pharmacopœia and the British Pharmaceutical Codex, the dis-

persing of prescriptions, the preparation and dispensing of sterile medicaments and materials, the detection of unusual doses and the completion of preparations in a proper manner. The preparation of sterile medicaments and materials includes the preparation of culture media, methods of evaluating antibiotics, sensitivity tests and tests for sterility.

The candidate will be required to bring to the practical examination his original laboratory notebooks, duly signed by the teacher, for inspection should the Examiners so desire. These notebooks must be taken away by the candidate at the close of the examination. In the practical examination the candidate will have the opportunity of consulting the British Pharmacopœia and the British Pharmaceutical Codex.

Pharmacognosy

The examination in this subject comprises one written session of three hours' duration and one practical session of three hours. The examiners are not precluded from asking candidates oral questions during the practical session.

The candidate will be required to have a knowledge of the following:—1. The commerce in and history of crude drugs. 2. Systems of classification of crude drugs. 3. Cultivation, collection, preparation for the market and storage of crude drugs. 4. Changes occurring in the drying, storage and comminution of crude drugs. The factors and organisms influencing deterioration of crude drugs. 5. Methods used for the examination of crude drugs. The isolation and identification of tissues and cells. Microchemical tests for cell walls and cell contents. Microscopical measurements. The systematic description of crude drugs. 6. The macroscopical and sensory characters, biological and geographical sources, commercial varieties and adulterants and constituents of the crude drugs in frequent use in pharmacy. 7. The microscopy of drugs of organised structure in the whole, broken or powdered condition, as illustrated by cascara, clove, cardamom fruit, fennel, belladonna herb, ginger, liquorice, ipecacuanha. 8. The microscopy of the starches and starch products of pharmaceutical importance. The use of microscopical characters to identify drugs of unorganised structure in frequent use in pharmacy. 9. Groups of drug constituents and their significance in pharmacy. Qualitative tests for the identification of, or the detection of adulteration in, the crude drugs in frequent use in pharmacy. 10. The types and significance of standards for

crude drugs included in the British Pharmacopœia and the British Pharmaceutical Codex. The evaluation of crude drugs. 11. Unmedicated surgical dressings, their manufacture, structure and standards. The sources, preparation, characters, qualitative chemical tests and constituents of fibres used in the manufacture of surgical dressings. 12. The principles underlying the practical work of the syllabus.

PRACTICAL

The candidate must be prepared: 1. To examine and describe the macroscopical characters, the general distribution of tissues, the nature of the cell walls and the cell contents of crude drugs, and to refer them to their morphological groups. 2. To identify in the entire or broken condition, by their gross characters and by qualitative tests, the crude drugs in frequent use in pharmacy and to state their biological and geographical sources. 3. To detect adulteration and deterioration in crude drugs in frequent use in pharmacy. 4. To analyse mixtures of crude drugs in the entire or broken conditions. 5. To examine microscopically, identify and describe the drugs included in paragraphs 7 and 8 of the theoretical syllabus. 6. To identify powders of single crude drugs and to report upon their purity. (The candidate will be allowed to use any book or books he wishes to bring.) 7. To make microscopical measurements. 8. To examine, identify and report on the fibres and dressings named in paragraph 11 of the theoretical syllabus. 9. To carry out simple exercises in drug evaluation. 10. To recognise, in the entire condition, those crude drugs used in pharmacy or as sources of isolated active principles.

The candidate will be required to bring to the practical examination his original laboratory notebooks, duly signed by the teacher, for inspection should the Examiners so desire. These notebooks must be taken away by the candidate at the close of the examination. In the practical examination the candidate may use any book or books he chooses to bring (including his own practical notebooks) except for the answering of those questions involving objective descriptions of the macroscopical characters of crude drugs or the microscopical characters of those drugs indicated in paragraph 5 of the practical syllabus.

Physiology and Pharmacology

The examination comprises one written session of three hours' duration and one

practical session of three hours' duration. The examiners are not precluded from asking candidates oral questions during the practical session.

The candidate will be expected to possess an elementary knowledge of the basic facts in the branches of physiology and pharmacology listed below, and of the main methods by which these facts were established.

PHYSIOLOGY

(General): The properties and control of skeletal, visceral and cardiac muscle. The formation, properties, functions and circulation of the blood and lymph. The mechanism and control of pulmonary ventilation; gaseous interchange at the lungs and tissues. Artificial respiration. The alimentary tract. Basal metabolism and body heat. The principles involved in constructing a balanced diet; vitamins. The kidneys and urinary tract. The central and peripheral nervous systems, including the autonomic nerves. The special senses of sight, taste and smell. The structure and functions of the glands of internal secretion, including (a) pituitary body, (b) thyroid and parathyroids, (c) pancreas, (d) suprarenals, (e) testes and ovaries. The elements of reproduction in man. (Histology): The candidate must possess an elementary knowledge of the microscopical structure of the following:—Muscle and nerve; the heart, blood vessels and blood; lungs; the digestive glands; stomach and intestines; liver; kidneys; skin; the endocrine glands and the reproductive organs, including the mammary gland and the placenta. (Biochemistry): The biochemistry and metabolism of carbohydrates, fats and proteins. The composition and functions of the salivary, gastric, biliary, pancreatic and intestinal secretions. The composition and nutritional value of common foodstuffs. The chemistry of muscular contraction. The composition of blood, lymph and cerebrospinal fluid. Normal and abnormal constituents of urine.

PHARMACOLOGY

Scope of pharmacology. Theories of action. Factors affecting drug action. Quantitative methods in pharmacology. Dose-response curves. The general principles and methods underlying the biological assays of the British Pharmacopœia, excluding the assays of sera, vaccines and bacterial derivatives. Special attention should be given to the determination of toxicity and LD₅₀. An elementary study of the statistical prin-

ciples involved in the assessment of the error of these quantitative tests. Drugs affecting structures innervated by the autonomic nervous system and by the somatic motor nerves. Drugs used as central nervous depressants and stimulants, Antipyretics, Local anaesthetics, Emetics; antacids; purgatives; astringents; diuretics. Disinfectants, bactericides and bacteriostatics, including antibiotics. The application of pharmacological principles in treatment of poisoning.

PRACTICAL

The candidate must be prepared:—To show his acquaintance with the methods employed for the demonstration of fundamental physiological and pharmacological processes, as laid down in the foregoing syllabus, and to carry out such chemical

manipulations or simple experiments as are comprised therein. To recognise and describe with diagrams, histological preparations of any tissue or organs mentioned in the foregoing syllabus.

Laboratory Notebooks

The candidate will be required to bring to the practical examination his original laboratory notebooks, duly signed by the teacher, for inspection should the Examiners so desire. These notebooks must be taken away by the candidate at the close of the examination. In the practical examination the candidate will be allowed to use his original laboratory notebooks, other than his histology notebook, provided that the books contain no other matter.

The use of loose-leaf laboratory notebooks, in any subject, will not be acceptable to the examiners.

COURSES FOR PHARMACY STUDENTS

I. Intermediate Examination

THE following educational establishments offer courses for the Pharmaceutical Society's Intermediate examination. Students are advised to apply for places as soon as possible. The dates of commencement and (in parentheses, where known) of enrolment are given.

Aberdeen: ROBERT GORDON'S TECHNICAL COLLEGE.—Head of pharmaceutical department: J. E. Bowen, B.Sc., Ph.C., F.R.I.C. October 7.

Birmingham: CENTRAL TECHNICAL COLLEGE.—Head of pharmaceutical department: F. R. C. Bateson, B.Pharm., Ph.C. September 22 (September 8-12).

Blackburn: MUNICIPAL TECHNICAL COLLEGE.—Head of science department: A. Walton, M.Sc., F.R.I.C. September 8 (ditto).

Boiton: MUNICIPAL TECHNICAL COLLEGE.—Head of chemistry department: D. C. Griffiths, M.Sc., Ph.D., F.R.I.C. September 22 (September 8).

Bournemouth: MUNICIPAL COLLEGE OF TECHNOLOGY AND COMMERCE.—Head of pure science department: E. A. Seeley, Ph.D., A.R.I.C. September 15 (September 8-11).

Bradford: TECHNICAL COLLEGE.—Head of pharmaceutical department: F. N. Appleyard, B.Sc., Ph.C., F.R.I.C. September 29 (September 23-26).

Brighton: TECHNICAL COLLEGE.—Head of pharmaceutical department: H. B. Mackie, B.Pharm., Ph.C. September 23. No vacancies.

Bristol: COLLEGE OF TECHNOLOGY.—Head of pharmaceutical department: W. Cooper, Ph.C. September 18 (immediately).

Burnley: MUNICIPAL COLLEGE.—Head of chemistry department: F. Dearnley, M.Sc., F.R.I.C. September 29 (September 15-19).

Cardiff: COLLEGE OF TECHNOLOGY AND COMMERCE.—Head of pharmaceutical department: R. V. Lloyd, B.Pharm., Ph.C. September 24 (September 4).

Carlisle: TECHNICAL COLLEGE.—Head of chemistry department: F. H. Day, M.Sc., Ph.D., F.C.S. September 22 (previous week).

Chelmsford: MID-ESSEX TECHNICAL COLLEGE.—Head of science department: M. R. Gridley, B.Sc. (hons.), F.Inst.P. September 16 (September 15).

Cheltenham: NORTH GLOUCESTERSHIRE TECHNICAL COLLEGE.—Head of science department: L. McPherson, M.Sc., F.Inst.P., F.R.Met.S. September 15 (September 8-12).

Coventry: TECHNICAL COLLEGE.—Head of chemistry department: H. C. Smith, M.Sc., Ph.D., F.R.I.C. September 22 (September 11).

Croydon: POLYTECHNIC.—Head of chemistry department: W. J. Boyd, B.Sc., Ph.D., A.R.I.C. September 22 (September 15).

Crumlin: TECHNICAL COLLEGE OF MONMOUTHSHIRE.—Head of chemistry department: G. Gratton, M.Sc., B.Sc. (hons.), A.R.I.C. September 11 (ditto).

Dagenham: SOUTH-EAST ESSEX TECHNICAL COLLEGE.—Head of chemistry depart-

ment: J. Ratcliffe, B.Sc., F.R.I.C. (September 23 (September 9)).

Derby: TECHNICAL COLLEGE.—Head of chemistry department: A. G. Catchpole, Ph.D., B.Sc., F.R.I.C. September 22 (ditto).

Doncaster: TECHNICAL COLLEGE.—Head of chemistry department: W. F. Andrews, M.Sc., B.Sc., A.R.I.C. September 22 (September 15).

Dundee: TECHNICAL COLLEGE.—Head of pharmaceutical department: H. A. Perkin, B.Pharm., Ph.C. September 22 (immediately).

Edinburgh: HERIOT-WATT COLLEGE.—Head of pharmaceutical department: H. H. Campbell, A.H.W.C., B.Sc., Ph.C., F.R.I.C. October 7 (September 30).

Folkestone: TECHNICAL COLLEGE.—Lecturer in charge, science department: K. L. Scott, Ph.D., B.Sc. September 15 (immediately).

Gillingham: MEDWAY TECHNICAL COLLEGE.—Head of chemistry department: H. I. Stonehill, B.Sc., Ph.D. September 9 (September 8).

Glasgow: ROYAL TECHNICAL COLLEGE.—Head of pharmaceutical department: Professor J. P. Todd, Ph.D., Ph.C., F.R.I.C. October 6.

Gloucester: TECHNICAL COLLEGE.—Head of science department: R. Harrison, M.A., B.Sc., A.R.I.C. September 22 (September 8).

Guildford: COUNTY TECHNICAL COLLEGE.—Senior lecturer in chemistry: J. C. Bevan, M.A., B.Sc., A.R.I.C. September 22 (immediately).

Halifax: MUNICIPAL TECHNICAL COLLEGE.—Head of chemistry department: L. Hey, B.Sc., Ph.D., A.R.I.C. September 22 (September 8-11).

Huddersfield: TECHNICAL COLLEGE.—Head of pharmaceutical department: E. Lees, M.Sc., B.Sc. September 15 (September 8-11).

Hull: MUNICIPAL TECHNICAL COLLEGE.—Head of chemistry department: L. Balmforth, B.Sc., F.R.I.C. September 9 (immediately).

Kingston-on-Thames: TECHNICAL COLLEGE.—Head of chemistry department: H. P. Starck, M.A. September 22 (September 17).

Leeds: COLLEGE OF TECHNOLOGY.—Head of chemistry department: W. R. Burnham, M.Sc., Ph.D., A.R.I.C. September 10 (September 9).

Leicester: COLLEGE OF TECHNOLOGY.—Head of pharmacy department: C. Gunn, B.Pharm., Ph.C. September 15 (now).

Liverpool: COLLEGE OF TECHNOLOGY.—Head of pharmaceutical department: T. L. Bowyer, Ph.C., F.R.I.C. September 8 (September 1).

London: ACTON TECHNICAL COLLEGE, London, W.3.—Head of chemistry department: J. H. Skellon, T.D., M.Sc., Ph.D., F.R.I.C. September 22 (September 11 and 12).

CHelsea: POLYTECHNIC, London, S.W.3.—Head of pharmaceutical department: C. Morton, B.Sc., Ph.C. September 29 (September 24). No vacancies.

NORThern: POLYTECHNIC, London, N.17.—Head of chemistry department: W. Gerard, D.Sc., Ph.D., F.R.I.C. September 22 (by letter immediately).

NORwood: TECHNICAL INSTITUTE, London, S.E.27.—Head of chemistry department: J. T. Stock, M.Sc., Ph.D., F.R.I.C. September 1 (immediately).

WALTHAMSTOW: SOUTH-WEST ESSEX TECHNICAL COLLEGE, London, E.17.—Head of science department: R. W. Jukes, B.Sc. September 10 (ditto).

WEST HAM: MUNICIPAL COLLEGE, London, E.15.—Head of chemistry department: F. L. Allen, Ph.D., M.Sc., F.R.I.C. September 22 (immediately).

WOOLWICH: POLYTECHNIC, London, S.E.18.—Head of chemistry department: A. I. Vogel, D.Sc., D.I.C., F.R.I.C. September 22 (September 15 and 16).

Middlesbrough: CONSTANTINE TECHNICAL COLLEGE.—Head of chemistry department: J. W. Gailer, M.Sc., A.R.I.C. September 22 (September 8).

Neath: TECHNICAL COLLEGE.—Head of chemistry department: E. McCutcheon, M.Sc. September 15 (September 8).

Newcastle-on-Tyne: RUTHERFORD COLLEGE OF TECHNOLOGY.—Head of pharmaceutical department: E. W. Mills, B.Sc., Ph.D., F.R.I.C. September 22 (September 8).

Newport: TECHNICAL COLLEGE.—Head of chemistry department: L. McGraghan, M.Sc., F.R.I.C. September 1 (ditto).

Northampton: COLLEGE OF TECHNOLOGY.—Head of chemistry department: W. Siddall, B.Sc., Ph.D., A.R.I.C. September 15 (September 8).

Norwich: CITY COLLEGE AND ART SCHOOL.—Head of science department: R. Jones, B.Sc. September 15 (September 5).

Nottingham: NOTTINGHAM AND DISTRICT TECHNICAL COLLEGE.—Head of chemistry department: J. R. Rowlands, M.Sc., A.R.I.C. September 15 (September 12).

Plymouth: TECHNICAL COLLEGE.—Head of pharmaceutical department: V. Smith, M.Sc., F.R.I.C., Ph.C. September 15 (immediately). No vacancies.

Portsmouth: MUNICIPAL COLLEGE. — Head of pharmaceutical department: E. Thorpe, B.Sc., B.Pharm., Ph.C. September 16 (September 10).

Preston: HARRIS INSTITUTE.—Head of chemistry department: E. Taylor, M.Sc., F.R.I.C. (enrolment during week ending September 13).

Rotherham: TECHNICAL COLLEGE. — Head of chemistry department: M. B. Thompson, A.R.S.M., B.Sc. (hons.), Ph.D., F.I.M., M.Inst.M. September 22 (September 10-16).

St. Helens: MUNICIPAL TECHNICAL COLLEGE. — Head of chemistry department: A. H. Henson, B.A., A.R.I.C. September 8 (September 2-5).

Salford: ROYAL TECHNICAL COLLEGE.—September 23 (September 16).

Shrewsbury: TECHNICAL COLLEGE. — Head of pharmaceutical department: N. Baldwin, B.Sc. September 15 (ditto).

Southport: TECHNICAL COLLEGE. — Head of chemistry department: A. E. Hollis, B.Sc. September 1 (immediately).

Stockport: COLLEGE.—Principal: R. S. Haddow, B.Sc. Eng., A.M.I.Mech.E. September 22 (September 16).

Stoke-on-Trent: NORTH STAFFORDSHIRE TECHNICAL COLLEGE.—Head of pharmaceutical department: H. V. Thompson, M.A. September 22 (September 8-12).

Sunderland: TECHNICAL COLLEGE. — Head of pharmaceutical department: F. H. Oliver, B.Sc., B.Pharm., Ph.C. October 1 (September 24).

Swansea: TECHNICAL COLLEGE.—Head of chemistry department: F. R. Harries, Ph.D., F.R.I.C. September 22 (September 15).

Torquay: SOUTH DEVON TECHNICAL COLLEGE.—Head of chemistry department: A. E. Oldbury, B.Sc. September 22 (immediately).

Wigan: WIGAN AND DISTRICT MINING AND TECHNICAL COLLEGE.—Head of chemistry department: H. K. Dean, B.Sc., Ph.D., F.R.I.C. September 22 (September 18).

Wolverhampton: WOLVERHAMPTON AND STAFFORDSHIRE TECHNICAL COLLEGE. — Head of department of applied science: J. A. Waddam, B.Sc. (hons.), M.Sc. (Lond.), A.R.I.C. September 15 (last date, September 8).

enrolment are given where they are different from those for the Intermediate examination.

Aberdeen: ROBERT GORDON'S TECHNICAL COLLEGE.

Birmingham: CENTRAL TECHNICAL COLLEGE.—No vacancies.

Bradford: TECHNICAL COLLEGE.

Brighton: TECHNICAL COLLEGE.

Bristol: COLLEGE OF TECHNOLOGY.

Dundee: TECHNICAL COLLEGE.—September 29 (ditto).

Edinburgh: HERIOT-WATT COLLEGE.

Glasgow: ROYAL TECHNICAL COLLEGE.—October 6. No vacancies.

Leicester: COLLEGE OF TECHNOLOGY.—September 15 (immediately). No vacancies.

London: CHELSEA POLYTECHNIC.—Enrolment on September 22. No vacancies.

Manchester: THE UNIVERSITY.—Professor of Pharmacy: H. Brindle, M.Sc., F.R.I.C., Ph.C. October 2 (September 24).

Nottingham: THE UNIVERSITY.—Head of pharmaceutical department: G. E. Trease, B.Pharm., Ph.C., F.R.I.C., F.L.S. No vacancies.

Plymouth: TECHNICAL COLLEGE.

Portsmouth: MUNICIPAL COLLEGE.

Sunderland: TECHNICAL COLLEGE. — October 7 (ditto).

III. Degree Courses in Pharmacy

The following universities and colleges offer courses for internal degrees in pharmacy:—

Cardiff: COLLEGE OF TECHNOLOGY.—B.Pharm. (University of Wales). September 24 (September 4). No vacancies.

Glasgow: ROYAL TECHNICAL COLLEGE.—Honours degree course for Bachelor of Science in Pharmacy. October 6 (ditto). No vacancies.

London: SCHOOL OF PHARMACY, University of London, 17 Bloomsbury Square, London, W.C.1. Dean: Professor H. Berry, B.Sc., Dip. Bact. (Lond.), F.R.I.C., Ph.C., B.Pharm. of University of London. October 1. No vacancies.

Manchester: UNIVERSITY OF MANCHESTER.—B.Sc. (Pharmacy). September 29 (ditto). No vacancies for final course.

Nottingham: THE UNIVERSITY. — B.Pharm. (University of Nottingham). October (before December 31, nine months ahead of entry date). No vacancies for session commencing October 1952.

The following technical colleges offer courses for the Intermediate B.Pharm. (London) (external) examination:—

II. Qualifying Examination

The following offer courses for the Pharmaceutical Society's Qualifying examination. The dates of commencement and

Aberdeen: ROBERT GORDON'S TECHNICAL COLLEGE.

Birmingham: CENTRAL TECHNICAL COLLEGE.

Blackburn: MUNICIPAL TECHNICAL COLLEGE.

Bolton: MUNICIPAL TECHNICAL COLLEGE.

Bournemouth: MUNICIPAL COLLEGE OF TECHNOLOGY.

Bradford: TECHNICAL COLLEGE.

Brighton: TECHNICAL COLLEGE.

Bristol: COLLEGE OF TECHNOLOGY.

Croydon: POLYTECHNIC.

Dagenham: SOUTH-EAST ESSEX TECHNICAL COLLEGE.—September 23 (September 22).

Derby: TECHNICAL COLLEGE.

Dundee: TECHNICAL COLLEGE.

Folkestone: TECHNICAL COLLEGE.

Gillingham: THE MEDWAY TECHNICAL COLLEGE.

Guildford: COUNTY TECHNICAL COLLEGE.

Huddersfield: TECHNICAL COLLEGE.

Hull: MUNICIPAL TECHNICAL COLLEGE.

Kingston-on-Thames: TECHNICAL COLLEGE.

Leicester: COLLEGE OF TECHNOLOGY.

London: ACTON TECHNICAL COLLEGE.—September 22 (ditto). CHELSEA POLYTECHNIC.—No vacancies. NORTHERN POLYTECHNIC.—WEST HAM MUNICIPAL COLLEGE.—WOOLWICH POLYTECHNIC.

Neath: TECHNICAL COLLEGE.

Northampton: COLLEGE OF TECHNOLOGY.

Norwich: CITY COLLEGE.—September 15 (September 5). Few vacancies for classes in botany and zoology.

Plymouth and Devonport: TECHNICAL COLLEGE.

Portsmouth: MUNICIPAL COLLEGE.

Rotherham: COLLEGE OF TECHNOLOGY.

Salford: ROYAL TECHNICAL COLLEGE.—Full-time, September 23 (September 16); part-time, September 22 (September 29).

Sunderland: TECHNICAL COLLEGE.

Swansea: TECHNICAL COLLEGE.

Torquay: SOUTH DEVON TECHNICAL COLLEGE.

Wigan: WIGAN AND DISTRICT TECHNICAL COLLEGE.

Wolverhampton: WOLVERHAMPTON AND STAFFORDSHIRE TECHNICAL COLLEGE.

The following technical colleges offer courses for the final Bachelor of Pharmacy (London) (external) examination:—

Aberdeen: ROBERT GORDON'S TECHNICAL COLLEGE.

Bradford: TECHNICAL COLLEGE.—September 29.

Brighton: TECHNICAL COLLEGE.—Probably a few vacancies.

Leicester: COLLEGE OF TECHNOLOGY.

London: CHELSEA POLYTECHNIC.—September 29 (September 22). No vacancies.

Portsmouth: MUNICIPAL COLLEGE.

Sunderland: TECHNICAL COLLEGE.

IV. Examination Revision Courses

Coventry: TECHNICAL COLLEGE.—No special revision courses but day and evening classes useful for Intermediate pharmacy students are available.

Hull: MUNICIPAL TECHNICAL COLLEGE.—Course for students referred or failed in the Qualifying examination of the Pharmaceutical Society.

Nottingham: NOTTINGHAM AND DISTRICT TECHNICAL COLLEGE.—Organic chemistry revision course for post-intermediate pharmacy students.

Preston: HARRIS INSTITUTE.—Evening revision class for Intermediate examination of the Pharmaceutical Society.

V. Post-graduate and Refresher Courses, etc.

Bristol: COLLEGE OF TECHNOLOGY.—Refresher and post-graduate courses arranged in conjunction with the Bristol Branch of the Pharmaceutical Society.

Coventry: TECHNICAL COLLEGE.—Facilities available for evening courses in physiology, pharmacognosy, dispensing and organic chemistry.

Edinburgh: HERIOT-WATT COLLEGE.—Associateship of Heriot-Watt College in Applied Pharmacy. October 7 (September 30). Restricted for the time being to Pharmaceutical Chemists who have obtained their diploma through the College.

London: SCHOOL OF PHARMACY, University of London.—Facilities for post-graduate work in all subjects of the B.Pharm. honours degree. ACTON TECHNICAL COLLEGE.—Courses of twelve lectures on "The Vitamins," commencing October 1 (Wednesdays at 7.30 p.m.); and "Some Aspects of the Chemistry of Oils Fats and Waxes," commencing September 26 (Fridays at 7.30 p.m.). Enrolment by post as soon as possible. Details from principal. CHELSEA POLYTECHNIC.—Short post-graduate courses of lectures on recent developments in Pharmacy are held at intervals throughout the session. Detail to be published. Courses of twenty lec-

tures on biochemistry and eleven lectures on principles of cosmetic chemistry to be held by the chemistry department. **NORTHERN POLYTECHNIC.**—Special evening courses in surface chemistry, etc. Details from head of chemistry department. **NORWOOD TECHNICAL COLLEGE.**—Course of twelve lecture—practical periods in micro-chemistry. Course commences January 10, 1953 and each Saturday morning 9.15 a.m. to 12.30 p.m. Enrolment up to December 5. Further particulars from the secretary. **WEST HAM MUNICIPAL COLLEGE.**—Post-graduate courses held from time to time.

Manchester: UNIVERSITY OF MANCHESTER.—Facilities for research in pharmacy.

Nottingham.—**THE UNIVERSITY.**—Full facilities in all departments for post-graduate research.

Salford: ROYAL TECHNICAL COLLEGE.—Lecture courses in colloid chemistry, distillation and design of experiments.

Southport.—**TECHNICAL COLLEGE.**—Organic chemistry course for pharmacy apprentices, in preparation for final examination.

Wigan: WIGAN AND DISTRICT TECHNICAL COLLEGE.—Post-graduate evening classes are provided in the chemistry department on glass-blowing and micro-chemistry; and in the biology department on bacteriology.

Wolverhampton: WOLVERHAMPTON AND STAFFORDSHIRE TECHNICAL COLLEGE.—Special courses during summer term.

Diploma in Biochemical Analysis

The course for the Diploma in Biochemical Analysis is concerned with the chemical examination of urine, blood, etc. Courses are available at:—

Hull: MUNICIPAL TECHNICAL COLLEGE.—September 22 (on or before September 1). Subject to necessary number of applications.

London: CHELSEA POLYTECHNIC.—October 15 (by post as soon as possible). Subject to necessary number of applications.

Nottingham: THE UNIVERSITY.—No vacancies for session 1952-53. Enrolment before December 31, for session commencing October 1953.

Sunderland: TECHNICAL COLLEGE.—October 7 (ditto).

Apothecaries' Assistants

COMPLYING with obligations laid down in the Apothecaries Act, 1815, the Society of

Apothecaries of London, Black Friars Lane, Queen Victoria Street, London, E.C.4, continues to issue "certificates of competence to act as assistants in dispensing." Candidates for the examinations are examined in dispensing, chemistry, pharmacology, forensic pharmacy, and the translation of prescriptions. Examinations are held in January, April, July and October of each year. Courses (where school is not named refer to above list):—

London: Northern Polytechnic; London College of Pharmacy, 7 Westbourne Park Road, Bayswater, London, W.2. Belfast: College of Technology, Blackburn: (Chemistry only). Brighton Technical College. Bristol: The Dispensary, Bristol General Hospital, College of Technology. Cardiff, Coventry, Derby: (Chemistry only. Pharmacology and dispensing might be arranged at a hospital). Edinburgh: Chemical Laboratory, Royal Infirmary, Huddersfield, Hull, Leicester, Liverpool: Central Technical College. Newark, Notts: County Technical College. Newcastle-on-Tyne: Royal Victoria Infirmary, Queen Victoria Road. Newport, Northampton, Norwich (chemistry only). Oxford: Schools of Technology, Art and Commerce. Plymouth, Portsmouth, Sheffield: The Royal Sheffield Infirmary and Hospital. Southend: Technical College. Stockport, Stoke-on-Trent, Sunderland, Swansea, Wolverhampton and New Cross Hospital.

Pharmacy (Northern Ireland)

Apprenticeship.—In order to qualify for registration as an apprentice in Northern Ireland a candidate must have passed at one examination (a) either any United Kingdom matriculation examination, the Grammar School Senior Certificate examination of the Northern Ireland Ministry of Education or the general certificate of education of the University of London in English or English language, a mathematical subject and three of the following: English literature (when a separate subject), Latin, French, German, domestic science, history, geography botany or biology or zoology, chemistry, physics or mechanics. Apprenticeship comprises four years under articles with an employer who is a registered pharmacist or who undertakes to appoint a registered pharmacist on his staff to supervise the student's work. During the final year of apprenticeship the student attends a full-time course.

Preliminary Scientific Examination.—Having served his apprenticeship and attended an approved course of instruction of not less than 750 hours, the candidate must pass the Part I examination in chemistry, physics and biology (entrance fee £6 6s. for the first entry and £4 4s. for any subsequent entry).

Pharmaceutical Chemist Qualifying Examination.

—A candidate may proceed to the qualifying examination without having passed Part 1 if he has passed the intermediate B.Sc. examination in pharmaceuticals of the Queens University of Belfast. The subjects at the approved full-time course are:—

PHARMACEUTICAL CHEMISTRY.—Principles of inorganic and organic chemistry illustrated by compounds in frequent pharmaceutical use. The characters, preparation and properties of the main types of aliphatic and simpler aromatic (with a single benzene ring) compounds. Principles underlying tests and assays of the British Pharmacopœia. *Practical:* Preparation and/or identification of certain organic compounds. Identification of the elements and characteristic organic groups. Performance of B.P. tests. Volumetric and alkaloidal (of simple solution only) assays.

PHARMACOGNOSY.—Recognition of certain B.P. or B.P.C. drugs, their sources, characters, active principles, varieties, and adulterants; knowledge of B.P. and B.P.C. tests.

PHARMACEUTICS.—Principles involved in pharmaceutical operations. Galenical preparations included in the B.P. Biology of bacteria so far as it affects the syllabus. Surgical dressings and their standardisation. Interpretation of prescriptions. Maximum B.P. doses. *Practical:* Preparation of galenicals and of sterile medicaments. Dispensing of prescriptions and detection of unusual doses.

PHYSIOLOGY.—An elementary knowledge of (i) biochemistry of food and tissues, (ii) structure of various tissues and organs, (iii) properties of muscle, (iv) the nervous system, (v) vision, (vi) the blood, (vii) the heart and peripheral blood vessels, (viii) respiration, (ix) digestion, (x) body heat, (xi) urine, (xii) endocrinology and (xiii) biological assays.

FORENSIC PHARMACY.—Knowledge of Acts relating to pharmacy in shop and hospital including the Dangerous Drugs, Therapeutic Substances and Pharmacy and Poisons (Northern Ireland) Acts.

The examination is held each June and December. Entrance fees: First entry, £12 12s.; subsequently, £6 6s. A candidate who has passed or obtained exemption from the Preliminary Scientific examination and has passed the Final Part 1 for the B.Sc. in Pharmaceutics, Queens University, need only pass the examination in

forensic pharmacy to qualify for registration as a Pharmaceutical Chemist.

The institutions approved by the Society for preparation for the Preliminary Scientific examination are:—

College of Technology, Belfast.
Municipal Technical College, Londonderry.
Technical School, Portadown.
Technical School, Coleraine.
Technical School, Larne.
Technical School, Newry.
Technical School, Omagh.

and for the Pharmaceutical Chemist Qualifying examination:—

College of Technology, Belfast.

Pharmacy (Republic of Ireland)

An applicant for registration as a pharmaceutical student in the Republic of Ireland must have passed a preliminary examination in English, Irish, Latin, mathematics and a fifth subject, and in addition the pre-registration examination of the Pharmaceutical Society of Ireland. A candidate who has gained credit for physics and chemistry in the preliminary examination or in certain university examinations is exempt from the pre-registration examination. The preliminary examination may be: (a) the Leaving Certificate examination of the Irish Department of Education, (b) the matriculation examination of the National University, (c) any examination of equivalent standard conducted outside the State, which may be acceptable to the Council.

The Science Course.—A registered student must attend the Society's College for a continued course of three terms lectures in pharmaceutical and general chemistry, biology, pharmaceutics, forensic pharmacy, history of pharmacy and ethics. A student must pass terminal examination and the First Professional examination (held annually).

Apprenticeship.—A student who has passed the First Professional examination must serve three years as an apprentice in an approved pharmacy.

The Pharmacy Course.—At the conclusion of apprenticeship a student returns to the Society's College for a further continuous course of three terms of lectures in pharmaceutical chemistry, pharmaceutics, pharmacognosy, forensic pharmacy, compounding and dispensing, and the Irish Pharmacopœia. A student who has passed terminal examinations is entitled to enter for the Second Professional examination. On passing this he may apply for registration as a pharmaceutical chemist,

Syllabus: CHEMISTRY.—(a) *Theoretical and Physical Chemistry*: Atomic structure, gas laws, kinetic theory of gases, osmotic pressure, law of mass action, laws of electrolysis, ionisation, solubility product, pH values (including buffer solutions and indicators), molecular weight determinations, radioactivity, bond structure. (b) *Inorganic Chemistry*: A study of the chemistry of the elements based on the periodic table interpreted in the light of modern views on atomic structure. (c) *Organic Chemistry*: A general study of aliphatic and aromatic compounds, with special reference to those of pharmaceutical importance.

Practical: Qualitative analysis of simple salts and of mixtures containing not more than two basic and two acidic radicals. Volumetric analysis, including acidimetry and alkalimetry, permanganate, iodine and silver nitrate titrations; simple problems involving such titrations. Preparation of simple organic substances, including tests for purity such as melting-point and boiling-point determinations.

PHARMACEUTICS.—*Theoretical*: Preparation of pharmaceutical products of the Pharmacopœia, processes there employed, official methods of standardisation, processes employed in the compounding of prescriptions, precautions in aseptic dispensing, pharmaceutical sterilisation, application of physico-chemical concepts to pharmacy (e.g., osmotic pressure, pH solubility product, acid-base reactions, etc.) *Practical*: Weighing; measuring and compounding medicines, writing directions and labelling properly, calculation of quantities of prescriptions, detection of incompatibilities and overdoses, preparation of official and semi-official galenicals, sterilisation of medicaments and solutions for injection, identification of medicaments and preparations commonly used in medicine, compounding under aseptic conditions.

PHARMACOGNOSY.—The recognition of specimens of vegetable and animal substances used in medicine, a knowledge of their family, methods of cultivation, collection and preservation of drugs, and their source (botanical or zoological, and geographical); their chief constituents and alterants; their galenical preparations and doses.

BOTANY.—General morphology and physiology of the plant kingdom, systematic botany, characteristics of the principal members of the vegetable kingdom (algae,

fungi, pteridophyta and thallophyta) and the characters of a number of selected families.

ZOOLOGY.—General morphology of the animal, with special reference to a few selected examples, e.g., rabbit, dog-fish, etc. Physiology of animals: respiration, absorption, digestion and elaboration of food materials; enzymes and hormones.

BIO-CHEMISTRY.—Chemical structure of human tissues (e.g., bone, muscle, blood). Hormones, vitamins and enzymes, their location and action, and diseases caused by deficiency. Human physiology, location and functions of the principal human organs, action of medicaments in the treatment of infections and diseases.

INTRODUCTION TO BACTERIOLOGY.—A course on the biology of bacteria, the preparation of culture media, staining, etc., to provide students with a basis for more advanced work in the pharmaceuticals course.

Assistants' Examination.—A registered student who has passed the First Professional examination and who has completed his period of apprenticeship may enter for an examination for the qualification of Assistant to Pharmaceutical Chemist. This entitles the holder to carry out the duties of a pharmaceutical chemist in the temporary absence of one such but does not entitle him to conduct open shop.

Membership.—A person whose name is entered on the register of Pharmaceutical Chemists may use the suffix L.P.S.I. He may apply for membership of the Society (M.P.S.I.) and on election pays an annual subscription of £2 2s.

Fees.—Preliminary registration, £4 4s.; Science course, £45; First Professional examination, £6 6s.; Pharmacy course, £45; Second Professional examination, £6 6s.; Assistants' examination, £3 3s.; Assistant's registration £2 2s.; Licence registration, £10 10s.

A student registered prior to July 31 may elect to follow the regulations which were in force up to that date. If such a student has not passed the Licence examination during an interim period of six years, he will be obliged to conform to the regulations summarised above. As from October, the Licence examination will be conducted in two parts (corresponding to the First and Second Professional examinations). Part 1 consists of chemistry, botany and biology; part 2 of pharmaceuticals, pharmacognosy, compound-

ing and dispensing, forensic pharmacy. A candidate may not take part 2 until he has passed part 1, but a candidate may enter provisionally for both parts if he hopes to complete the examination in the same month. A candidate who fails part 1 may enter for re-examination at intervals of three months. A candidate who fails part 2 may enter for re-examination at intervals of six months. The fee for either part is £6 6s.

Medicine

THE registration body for medical practitioners in the United Kingdom is the General Medical Council, 44 Hallam Street, London, W.1. There are a number of examining bodies, and when a student has passed the final examination of one of these bodies he is entitled to registration as a medical practitioner.

Study occupies a minimum of five academic years after passing a recognised examination in general education and in chemistry, physics and biology.

The principal universities in the U.K. confer degrees in medicine and surgery (M.B., Ch.B. or equivalent). Other examining bodies whose qualifications confer a title to registration are:—

THE ROYAL COLLEGE OF PHYSICIANS OF LONDON and THE ROYAL COLLEGE OF SURGEONS OF ENGLAND, particulars from the Secretary, Examining Board in England, Examination Hall, 8 Queen Square, London, W.C.1.

THE SOCIETY OF APOTHECARIES OF LONDON, particulars are obtainable from the Registrar, Apothecaries' Hall, Black Friars Lane, Queen Victoria Street, London, E.C.4.

THE ROYAL COLLEGES OF PHYSICIANS AND SURGEONS OF EDINBURGH and THE ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW, particulars are obtainable from the Secretary, Scottish Conjoint Board, 18 Nicholson Street, Edinburgh.

The Medical Registration Council of Ireland recognises in addition to University degrees the qualification of THE APOTHECARIES HALL OF IRELAND, particulars from the Registrar, 95 Merrion Square, Dublin, C.17: and of THE ROYAL COLLEGE OF PHYSICIANS OF IRELAND and THE ROYAL COLLEGE OF SURGEONS OF IRELAND, particulars are obtainable from the Registrar, 6 Kildare Street, Dublin, or the Registrar, St. Stephens Green, Dublin, respectively.

Dentistry

DENTAL practitioners are registered in the dentists' register kept by the Dental Board of the United Kingdom, 44 Hallam Street, London, W.1. A course of professional study takes about five years (including a year devoted to chemistry, physics and biology) for a degree or diploma in dentistry. In some universities the degree course is slightly longer. Students are entitled to registration as dental practitioners on obtaining a licence or degree in dentistry granted by a university or a licence in dentistry granted by one of the following licensing bodies:—

THE ROYAL COLLEGE OF SURGEONS OF ENGLAND, particulars from the Secretary, Faculty of Dental Surgery of the College, Lincoln's Inn Fields, London, W.C.2.

THE ROYAL COLLEGE OF SURGEONS OF EDINBURGH, particulars are obtainable from the Clerk to College, 18 Nicholson Street, Edinburgh, 8.

THE ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW, particulars from the Registrar, 242 St. Vincent Street, Glasgow.

THE ROYAL COLLEGE OF SURGEONS OF IRELAND, particulars from the Registrar, St. Stephen's Green, Dublin.

Registration in Ireland is in the hands of the Dental Board, 57 Merrion Square, Dublin. The Board recognises the following examining bodies:—The Royal College of Surgeons in Ireland, St. Stephen's Green, Dublin; the University of Dublin and the National University of Ireland, Dublin.

Optics

THERE are five examining bodies concerned with the career of ophthalmic opticians: The Worshipful Company of Spectacle Makers, the British Optical Association, the National Association of Opticians, the Scottish Association of Opticians, and the Institute of Optical Science. Full-time courses for the examinations generally extend over three years and part-time over five years. Details of examination syllabuses, etc., may be obtained on application to the bodies mentioned above.

Chiropody

To gain admission to the National Register of Medical Auxiliary Services, it is necessary to pass the examination of the Society of Chiropodists, 21 Cavendish Square, London, W.1. Details on application to the Society.

ENGINEERING FOR PHARMACY STUDENTS

By D. Train, M.C., B.Pharm., B.Sc.(Eng.), A.R.I.C., A.C.G.I., Ph.C.,

(School of Pharmacy, University of London)

WHEN the teaching of pharmaceuticals, as found in text books, is reviewed for the past fifty years, it must be conceded that there has been an almost morbid retention of certain established ideas and techniques. This state of affairs is not confined to Britain. The few advances which have been made have usually taken the form of cataloguing the latest pieces of equipment developed by enterprising manufacturers and quoting their claims uncritically. There is nothing wrong with this approach, provided the established methods are fundamentally sound. But it must be remembered that pharmacy is an applied science which has developed from a collection of techniques based on rule-of-thumb methods. Also it has been prevented from growing naturally by exacting demands of an examination system which required a high standard of technical skill and a knowledge based to a greater extent on the "compounder's art" rather than a logical development from scientific fact. No applied science can stagnate when the bounds of fundamental knowledge are extending as rapidly as they are at present. If it does stagnate, its place is quickly taken by other more alert allied subjects which are developing on a sound basic foundation and whose students are being taught to apply that knowledge with a critical faculty. It is false to base teaching only on techniques, for this can only succeed in producing a technician who has not the background knowledge at his command to solve the problem of changing an existing procedure or developing a new one.

Many things in the "art" of pharmacy have been proved scientifically unreliable by the approach developed in chemical engineering, an applied science which was virtually non-existent thirty years ago. The development of this subject was not hindered by past tradition and could expand unfettered. Now some of its technologists have claimed that they are better equipped fundamentally than pharmacists to control pharmaceutical manufacture.

How can this state of affairs be altered? One approach is being tried by the School of Pharmacy, University of London, and may well prove to be the answer. The training in pharmaceuticals has been modified so that all students at a very early age appreciate the applied physics be-

hind the processes of heat and mass transfer, and fluid flow. Every effort is made to encourage them to apply this knowledge critically in the pharmaceutical processes which they meet later in their course, e.g., sterilisation, evaporation, drying, mixing and extraction, etc. If a student wishes to concentrate on the production of pharmaceuticals he can extend this basic knowledge by taking pharmaceutical engineering science as an optional subject in the third year of the B.Pharm. honours degree of the University. This has been developed as a qualitative and quantitative course in chemical engineering principles with emphasis at all times on the pharmaceutical bias necessary to ensure maximum potency and high quality control. It should be emphasised that the person so produced is still a pharmacist. His pharmaceutical training has been based on the same sound principles which are common to the chemical engineering world, but he is still interested in proper formulation and purity control and recognises the fact that it is ultimately the patient whom he is serving and not the process which he has produced.

Putting Techniques to the Test

Students taking this option are no longer taking for granted accepted techniques. Modifications to existing methods and apparatus are being suggested because they seem at variance with the basic principles of applied physics. Greater knowledge of the facts involved allows a more correct analysis of the mechanism governing the process to be made, and this in turn leads to a sounder assessment of methods of improvement, or to a better appreciation of the limitations of the process. This wider knowledge of the fundamentals of material processing must aid the application of the skill of the modern pharmacist, whether he be concentrating on the production, purification and formulation of a product, or on synthesis of modern medicaments. It will inevitably place him in a better position to discuss with his colleagues—the chemical, works, and plant engineers, or the plant manufacturer—what is to be done and the best way of doing it when the need arises to improve or enlarge an existing process or develop a new project. This is surely the type of new member the pharmaceutical world is looking for.

C. & D. REFRESHER COURSE for Pharmacists

Compiled by
COLIN GUNN, B. Pharm., Ph.C.
Assisted by
S. J. CARTER, B. Pharm., Ph.C.
D. R. BRAGG, B.Sc. Hons. (Lond.), B. Pharm., Ph.C.,
and E. J. FITCHETT, Ph.C.

19.—HORMONES

(FROM THE GREEK: *δρμῶν*, TO STIR UP OR EXCITE).

IN this article an attempt is made to summarise recent developments in our knowledge of hormones. The anterior pituitary, which has been referred to as the leader of the endocrine orchestra, would appear to be of sufficient importance to offer a suitable starting point.

Pituitary Gland (Anterior Lobe)

Of the two lobes of the pituitary gland, anterior and posterior, the former has assumed great importance since the effect of Compound E in rheumatoid arthritis was reported some three years ago and at the same time it was realised that adrenocorticotrophic hormone (ACTH) produced by the anterior pituitary would stimulate production of this compound by the adrenal cortex. ACTH is obtained from animal pituitary glands. It has to be given by injection since it is orally ineffective. The usual routes are the intramuscular or subcutaneous ones and less frequently the intravenous. In the majority of conditions for which it has been used it produces only temporary remissions. Some of the more important conditions which have been treated with it will be mentioned when cortisone is considered. Maximum daily dosage is in the region of 200 mgm, divided into four injections and this dose is at first rapidly and then gradually reduced as the symptoms of the condition are controlled. This is to encourage the patient's own gland to take over. When maintenance dosage is required a single daily injection of 10 mgm. may suffice. It obviously only produces its effects in the presence of normally functioning adrenal glands.

The Gonadotrophic Hormones

Next to be mentioned are the two gonadotrophic hormones. In the female, one of these has follicle stimulating effects (the production of oestrogen) and the other luteinising effects, i.e., causing the development of the corpus luteum (with the production of progesterin). In the male the former acts on the tubules of the testes

and stimulates the production of spermatozoa, and the latter on the interstitial cells of the testes to produce androgens (testosterone). The official gonadotrophins are not of human pituitary origin, the chorionic gonadotropin (luteinising) being obtained from the urine of pregnant women and the serum gonadotrophin (follicle stimulating) from the serum of pregnant mares. Chorionic gonadotrophin finds its main use in the treatment of cryptorchidism in boys in doses of 500 units two or three times weekly. In the female its effects are not considered to be proved. Serum gonadotrophin has been used in the male in defective spermatogenesis and in the female in the treatment of delayed puberty, amenorrhoea and hypomenorrhoea. Other substances produced are a lactogenic, a thyrotrophic and a growth hormone, the actions of which are self explanatory. These are at present of small therapeutic importance.

Pituitary (Posterior Lobe) and Adrenal

Turning to the posterior lobe we are on much safer ground. The two active principles, official in injection of vasopressin and injection of oxytocin respectively are more easily separated and clear-cut in their actions. Vasopressin controls the reabsorption of water in the kidney tubules (hence the name, antidiuretic principle) and it also has a pressor action. Because of its first action it is used in the control of diabetes insipidus (a disease characterised by the excretion of large quantities of weak urine). An oily suspension of the tannate has a more prolonged action. The oxytocic principle causes marked uterine contractions and is used occasionally to induce labour and mainly in the control of post-partum hæmorrhage.

The relationship between ACTH and cortisone prompts a consideration of the suprarenals next. The glands themselves, consisting as they do of a central medulla and surrounding cortex, secrete a number of hormones. The medulla produces the sympathomimetic adrenaline which needs

no review and *noradrenaline*, its lower homologue, has recently become available and is being used to maintain blood pressure during certain operations as it has a greater pressor activity than *adrenaline*. Our main interest is in the cortex which produces a number of steroids all of which are believed to be related to corticosterone.

CORTISONE.—Since the first announcement of the amazing effect of this substance in rheumatoid arthritis, sufficient time has elapsed for the therapeutic position to be seen in some kind of perspective and its limitations and side effects to be more clearly defined. Like ACTH it usually produces only temporary, albeit often dramatic, remissions. It is used in the treatment of rheumatoid arthritis and its variants, lupus erythematosus, (early) inflammatory eye conditions, allergic disorders and some inflammatory skin diseases. Cortisone and ACTH have probably been tried in more conditions than any other substance. Cortisone possesses advantages over ACTH in that it is active orally and is probably nearly as effective weight for weight as when given by injection. Also in ophthalmic work it can be used as drops in a strength of 5 mgm. per mil. Dosage may be as high as 300 mgm. on the first day of treatment (divided doses) in a manner similar to that advocated for ACTH. Dosage must be tailed off gradually to allow pituitary action, which is depressed, to increase and hence exercise its stimulating action on the cortex. Side effects include salt and water retention, hypopotassæmia, hypoglycæmia, psychic disturbances, acne, hirsutism, etc. Cortisone is only one member of one of three groups of hormones produced by this gland. Other compounds include Compound F which, like cortisone, blocks the body's reaction to injury and enables it to withstand severe stress. The most important member of this second group is deoxycorticosterone which is concerned with fluid-electrolytic balance and finds its main use in the treatment of Addison's disease. It is usually given (in daily dosage of approximately 5 mgm) by oily injection or implantation in pellets. In the crises of this disease suprarenal cortex extract is used for quick action and it is also used in certain kinds of shock.

Sex Hormones

These may be classified into three groups:—1. Androgens, testosterone. 2. Oestrogens, oestradiol and derivatives.

3. Progestins, progesterone. Having thus classified them it must be stated that they are not completely sex specific. All are steroid and being inefficient orally are given in oil or in aqueous suspension by injection, or by implantation. Group 1 hormones are essential in the male for the maintenance of secondary sex characteristics and normal functioning of the sex organs. The methyl derivative of testosterone is fortunately active orally and both it and testosterone are used in the male to produce their characteristic effect and in the female particularly in the treatment of mammary carcinoma. No cure is effected but regression of tumour growth sometimes occurs. Masculinisation may be caused.

In group 2 oestradiol may be regarded as the counterpart of testosterone. It and progesterone are concerned with the menstrual cycle and pregnancy and are to some extent antagonistic. Oestradiol is secreted during the preovulatory (proliferative or follicular) phase of the menstrual cycle. This is followed by the post ovulatory phase during which progesterone is the predominant hormone. This phase is terminated in the absence of a fertilised ovum by bleeding, attributable to the withdrawal of oestrogen from the circulation. The synthetic ethinyl derivative of oestradiol is the most powerful known oestrogen when given orally. The non-steroid synthetic substances stilboestrol, dienoestrol and hexoestrol are also orally effective but less powerful. Ethisterone is an orally effective derivative of progesterone. The therapeutic applications of the female sex hormones are numerous. They have been used for amenorrhœa, for which several regimens have been proposed, for menopausal disturbances, alone and combined with androgens. Oestrogens suppress lactation and in males, the growth of prostatic cancer.

Two more steroid hormones must be mentioned. The first, methylandrosterone, is an androgen without androgenic effects but possessing their anabolic properties, and the second, pregnenolone which has been tried in the treatment of rheumatoid arthritis.

Thyroid

The active principles of this, the first endocrine gland to be discovered, have been known for some years. Latterly the use of radioiodine has shed further light on the rôle of iodine and thyroxine, and

the synthesis of the latter has made it possible to administer a pure substance instead of a whole gland extract. Continued advances have been made in the treatment of hyperthyroidism during the past few years and at present the thiouracils (the propyl derivative being probably the best) are commonly used. They act by preventing the conversion of iodine into thyroxine. They are active orally, being rapidly dissolved and excreted (mainly in the urine) but toxic effects, some allergic in type and others, including agranulocytosis, occur. Radio-iodine also has therapeutic uses and the search for other useful and less toxic compounds proceeds as in other fields.

The Pancreas

Since insulin was first discovered much research has been devised towards finding a preparation only one daily dose of which is required and which maintains a satis-

factory blood sugar level during twenty-four hours. The proteins, protamine globin and others, it was discovered, when combined with insulin, would prolong the effect, and later the addition of zinc was found to improve this action and also the stability of the product. The latest development is the production in America of NPH insulin which it is claimed is the best preparation devised to date. It is a suspension of finely divided insoluble crystals of insulin, protamine and zinc. It has an action midway between insulin and protamine zinc insulin.

REVISION QUESTIONS

1. How does ACTH produce its effects?
2. (a) Which natural hormones are concerned with the maintenance of the menstrual cycle and (b) what orally active synthetics having comparable effects are used in therapy?

NEW BOOKS

Physical Biochemistry.—Henry B. Bull, Ph.D. Second edition. 9 x 5½ in. Pp. viii + 344. 46s. Chapman & Hall, Ltd., 37 Essex Street, Strand, London, W.C.2. The book is intended for all who intend to use physical chemistry in medical or biological problems. Two-thirds of the first edition (published in 1943) has been rewritten and new material included. There is an index and the book is well supplied with graphs and diagrams.

Iodine Pharmaceuticals. A checklist of iodine compounds and preparations.—9¾ x 7 in. Pp. 78 (including therapeutic index). 2s. 6d. Chilean Iodine Educational Bureau, Stone House, Bishopsgate, London. The large volume of inquiry regarding names, origins, formulas, and synonyms of various iodine compounds received by the Bureau has suggested the need for a published guide. Whilst it does not claim to include all products brought out since iodine was introduced nearly 150 years ago, iodine-containing products for human medicine in use today in the English-speaking world—together with a few of the well-known products of Germany, France, India and South America—are given exhaustively. The publishers ask for comment regarding any useful products that may have been omitted. The monographs, which occupy sixty-five double-column pages, give a brief description of the physical properties of each substance

and its therapeutic use. Manufacturer names are not given.

Physiology and Pharmacology for Pharmaceutical Students.—H. H. Barber, B.Sc. Ph.D. (London), F.R.I.C. Third edition. 8½ x 5½ in. Pp. x + 622. 25s. Bailière, Tindall & Cox, 7 Henrietta Street, London, W.C.2. Published originally in 1937 as "Physiology for Pharmaceutical Students," the present edition has had "Pharmacology" added to the title and 100 pages to the text. The book is designed to cover the requirements, in the subject dealt with, for degrees and diplomas in pharmacy in most English-speaking countries. To that end most chapters conclude with appropriate laboratory exercises. Pharmacology occupies two chapters: one on the pharmacology of some typical substances and the other on quantitative pharmacology. There is a chapter on the preparation and standardisation of reagents and staining solutions.

COMING EVENTS

Items for inclusion under this heading should be sent in time to reach the Editor not later than five days before the week of publication, and must be sent on Wednesday of the week of insertion.

PHARMACIST FREEMASONS ATTENDING BRITISH PHARMACEUTICAL CONFERENCE, who wish to attend a meeting of Temple Lodge No. 5196, Masonic Hall, Goldsmith Street, Nottingham, on Thursday, September 4 (C. & D., May 10, p. 651) should notify Mr. F. A. Bates, M.P.S., 195 Berridge Road, Nottingham, of their intention to attend not later than August 22, giving rank and local number.

TRADE REPORT

Spot quotations for pharmaceutical chemicals represent the prices for wholesale quantities of standard quality. Prices of crude drugs and essential oils vary as to brand or grade.

LONDON, JULY 30

ALL markets were quiet during the past week pending an expected announcement by the Chancellor of the Exchequer on new economy measures to be taken by the Government to balance the country's trade deficit.

Since the price schedules for THEOBROMINE and CAFFEINE were withdrawn on July 21 (*C. & D.*, July 26, p. 125) manufacturers have not made known their new prices. Quotations appear to vary according to quantity and destination, but for 1-cwt. lots in the home market they are approximately 9s. per lb. lower for CAFFEINE ALKALOID B.P. and 8s. 6d. per lb. for THEOBROMINE ALKALOID than those in force before that date.

Some shippers of Tinnevely SENNA have had to default on contracts for wet-crop f.a.q. PODS and in some cases have asked for an extension of the delivery time for LEAVES. The apparent crop failure in India and the political situation which developed in Egypt during the week has naturally tended to make Alexandria pods on the spot very firm. Otherwise the trend of prices for most CRUDE DRUGS was downward. Prime Cape ALOES was again easier at origin making the spot prices decline by 5s. per cwt. Influenced by lower Calcutta prices SHELLAC lost its recent firmness and was marked down by 5s. per cwt. African GINGER fell another 5s. per lb. over the previous week's quotations. HONEY is in reasonable supply with several substantial shipments of Australian material due to land shortly. The size of the next Australian crop is uncertain and importers fear that it may be small. No business has been done in new crop ERGOT although firm offers were received from origin at from 17s. to 19s. per lb., c.i.f. Business done on the Continent in Chinese MENTHOL was said to be responsible for a rise in price of 1s. 6d. per lb. for spot material. Brazilian on the other hand was slightly weaker. Owing to Italy buying FENUGREEK in Morocco new-crop prices jumped by 5s. 6d. per cwt.

In ESSENTIAL OILS there was a slight shading of prices in a few commodities. They included LEMONGRASS and Ceylon CITRONELLA, both were threepence per lb. lower.

U.S. Drug and Chemical Report

NEW YORK, JULY 29

THE U.S. Bureau of Customs has re-classified DICALCIUM PHOSPHATE from an article entitled to entry free of duty to an item at 12½ per cent. *ad valorem*. Domestic

MERCURY was quoted nominally at \$188-190 per flask, delivered, compared with \$190-193 previously. Synthetic CAFFEINE was reduced 50 cents per lb. to \$3.50 for the ANHYDROUS ALKALOID and \$3.30 for the HYDROUS, while CAFFEINE CITRATE dropped 25 cents to \$2.35. Lower priced foreign material brought a break in the price of THYMOL to \$3.30 per lb., down 35 cents. The tight supply situation caused AGAR to advance to \$2.00 for Kobé No. 1, up 15 cents. Sumatra BENZOIN is now available at 33-cents per lb., down five cents. Active demand for California LEMON OIL boosted the price to \$5.90, up five cents.

Pharmaceutical Chemicals

BENZAMINE.—B.P.C. LACTATE and HYDROCHLORIDE are 180s. per lb.

CAFFEINE. — 1-cwt. lots of the B.P. ALKALOID are about 27s. 6d. per lb., and the ANHYDROUS ALKALOID, 29s. 6d. per lb. The CITRATE is about 18s. 6d. per lb. for similar quantities.

GALLIC ACID.—B.P.C. is 8s. 7d. per lb. for 1-cwt. lots.

GLYCERIN.—Rates for chemically pure (B.P.) are as follows:—

	Under 1 cwt.	1 cwt. and under 5 cwt.	5 cwt. and under 1 ton	1 ton and under 5 ton	5 tons and under 25 tons
Minimum deliveries off contract of	—	1 cwt.	1 cwt.	5 cwt.	10 cwt.
Per cwt.	s. d.	s. d.	s. d.	s. d.	s. d.
Tins					
14-lb.	325 0	320 6	316 6	312 0	310 6
28-lb.	323 0	318 6	314 6	310 0	308 6
56-lb.	319 0	314 6	310 6	306 0	304 6
Drums					
1-cwt.	—	299 0	295 0	290 6	289 0
2½-cwt.	—	296 6	293 0	288 6	287 0
5-cwt.	—	—	292 6	288 0	286 6
10-cwt.	—	—	291 6	287 6	286 0

For 25 tons and upwards (minimum delivery off contract of 2 tons), 14-lb. tins, 309s. 6d.; 28-lb., 307s. 6d.; 56-lb., 303s. 6d.; 1-cwt. drums, 288s.; 2½ cwt., 286s.; 5-cwt., 285s. 6d.; 10-cwt., 285s. Extra charges are made for smaller deliveries.

GLYCEROPHOSPHATES.—Rates per lb. for 1-cwt. lots are as follows:—ACID, 20 per cent., 5s. 9d.; CALCIUM, soluble, B.P.C., 12s. 3d.; IRON, B.P.C., scale, 17s. 3d. and powder, 16s. 3d.; MAGNESIUM, soluble, B.P.C., 15s. 3d. and insoluble, 7s. 6d.; MANGANESE, 28s. 9d.; POTASSIUM, 50 per cent., 4s. 3d. and 75 per cent., 6s. 3d. SODIUM, 50 per cent., 3s. 3d. and 75 per cent., 4s. 9d.

HYPOPHOSPHITES. — Prices per lb. are unchanged as follows:—

SALT	7 lb.	28 lb.	1 cwt.
	s. d.	s. d.	s. d.
AMMONIUM ...	12 10	12 5	12 0
BARIUM ...	7 10	7 5	7 0
CALCIUM ...	5 11	5 6	5 1
IRON ...	12 1	11 8	11 3
MAGNESIUM ...	9 4	8 11	8 6
MANGANESE ...	10 11	10 4	9 6
POTASSIUM ...	7 11	7 6	7 1
SODIUM ...	6 7	6 2	5 9

ISONICOTINIC ACID HYDRAZIDE. — 1-cwt. lots are £26 per lb.

KHELLIN.—10-kilo lots are £118 15s. per kilo.

LACTOSE.—English, in 1-ton lots packed in 2-cwt. kegs, £142 per ton; in 1-cwt. kegs, £143 per ton. In 1-cwt. paper-lined bags, 5s. per cwt. less than the above rates. Prices include delivery in the United Kingdom.

LITHIUM SALTS.—Current rates for 1-cwt. lots are as follows:—CARBONATE, 10s. 6d. per lb.; CHLORIDE (commercial), 10s.; HYDROXIDE, 10s.; CITRATE, 8s. 6d.; SULPHATE, 7s. 10d.; SALICYLATE, 9s. 6d.

MAGNESIUM CARBONATE. — Rates are:—In 5-cwt. lots, 149s. 8d. per cwt.; 1-cwt., 155s. 2d. (in bulk). HEAVY, B.P. in bulk is from 150s. per cwt., as to quantity.

OXALIC ACID.—In quantities of 1-ton and less than 2 tons, spot material for the home trade is £133 10s. per ton, in 5-cwt. casks: 10 cwt.-1 ton, £138 10s. per ton; 5 cwt.-10 cwt., £143 10s. In 1-cwt. kegs, prices are £4 per ton more; quantities of less than 5-cwt., £162 10s. per ton. Packages free; delivered in U.K.

PANCREATIN.—1-cwt. lots of B.P. are now 8s. 6d. per lb. and U.S.P., 10s. 6d.

PHENYLACETIC ACID.—In 1-ton lots the price is now 5s. 6d. per lb.; 1-cwt., 6s. per lb. Perfumery grade, re-crystallised is from 8s. 6d. to 11s. 6d. per lb., as to quantity.

PHYSOSTIGMINE.—Rates per oz. for 25-oz. lots are as follows: ALKALOID, 157s. 6d.; SALICYLATE, B.P., 118s.; SULPHATE, B.P.C., 137s. 3d.

PIPERAZINE. — Quotations are from 37s. 6d. per lb.

POTASSIUM ACETATE. — In 1-cwt. lots B.P. granules are 2s. 8d. per lb.

POTASSIUM BICARBONATE.—B.P. powder is 130s. per cwt.

POTASSIUM CHLORIDE. — In 1-cwt. lots B.P. is 1s. 6d. per lb.

POTASSIUM BROMATE.—In 5-cwt. lots, 7s. per lb. In small quantities the prices range up to 8s. 9d. per lb.

POTASSIUM NITRATE. — Pharmacopoeial quality is 145s. per cwt. (crystal, granular or powder) and commercial, 90s.

POTASSIUM SULPHATE.—B.P.C. is from 100s. to 130s. per cwt., as to quantity.

POTASSIUM SULPHIDE. — B.P.C. lump and granulated are 1s. 11½d. and 2s. 3½d. per lb. respectively for 1-cwt. lots.

SODIUM ACETATE. — B.P.C. powder in 28-lb. lots is 1s. 9d. per lb.

SULPHOCARBONATES.—**SODIUM PHENOLSULPHONATE**, B.P.C. (powder) is now 7s. 11d. per lb. in 28-lb. lots; 7-lb., 8s. 3d. per lb. **ZINC**, B.P.C., is 7s. 7d. per lb. (28-lb.).

SACCHARIN.—In lots of 1-lb. and over B.P.C. powder is quoted at 98s. 4d. per lb.; the **SODIUM SALT** is 79s. 4d. per lb. Prices include duty and carriage.

SULPHAGUANADINE. — B.P. is about 22s. 6d. per lb. for 5-cwt. lots.

THIOBROMINE.—The **ALKALOID** is about 30s. 6d. per lb., and the **SODIUM SALICYLATE**, 21s. per lb. for 1-cwt. lots.

ZINC CHLORIDE. — B.P.C., cake, is from 4s. 6d. to 4s. 10d. per lb.; sticks, from 5s. 10d. to 6s. 2d. per lb.

ZINC SULPHATE.—B.P. in 1-cwt. lots is quoted at 1s. 4d. per lb.; 28-lb., 1s. 7d.

Crude Drugs

ACONITE.—Spanish *napellus* is 3s. 9d. per lb., duty paid, ex wharf.

ALOE.—Prime Cape is weaker at about 157s. 6d. per cwt., c.i.f.; spot is about 180s. Curaçao is 360s. per cwt., spot.

ANTIMONY. — English, 99.6 per cent £237 10s.; 99 per cent., £225 per ton.

ASA FETIDA.—Persian block is £18 per cwt., duty paid.

BALSAMS.—*Canada*: Spot is now 27s. 6d. per lb. for clear bright, paper - filtered forward, 25s. 6d. per lb., c.i.f.; prompt shipment. *Copaiba*: Para, soluble offered on the spot at 17s. 6d. per lb. *Peru* is 14s. per lb., duty paid, and 12s. 9d. c.i.f. *Tolu* (genuine as imported) on the spot is 32s. 6d. per lb., and for shipment 31s., c.i.f.

BENZOIN.—No. 1 Sumatra block on the spot is quoted at from £27 10s. per cwt. and for shipment, £25 10s., c.i.f. Siam almonds are from 27s. 6d. to 37s. 6d. per lb., spot, as to size.

BISMUTH. — In minimum 5-cwt. lot **METAL** is 21s. per lb.

BUCHU.—New-crop rounds are offered 2s. 2d. per lb., on the spot.

CAMPHOR. — Chinese (B.P.) powder the spot is 3s. 9d. per lb. in bond; 2-cwt. tablets are quoted at 5s. 10½d. per lb., duty paid; 2½-lb. slabs, 4s. 9d. per lb., duty paid.

CAPSICUMS.—East African on stalk, & from 130s. to 146s. per cwt., spot, and 110s., c.i.f.; off stalk are 210s., spot.

CARDAMOMS. — Aleppy greens for shipment are 14s. 9d. per lb., c.i.f., and spot 16s. 6d.

CASCARA SAGRADA.—American bark, 19

peel, is 275s. per cwt., duty paid. New crop, 220s., c.i.f.

CASSIA BARK. — Whole on the spot is 115s. per cwt., in bond; forward, 96s., c.i.f.

CHERRY BARK. — Thin cut natural is from 1s. 10s. to 2s. 2d. per lb., duty paid, as to holder.

CHILLIES.—Quiet. Sierra Leone on the spot are 200s. per cwt.; for shipment, 160s., c.i.f.; Mombasa, 240s. ex warehouse; for shipment, 210s., c.i.f.

CINCHONA. — Parcels of British East African chips testing 6.28 are offered at 1s. 6d. per lb., and Portuguese West African broken quills testing 7.26 at 1s. 9d. per lb.

CINNAMON. — Ceylon for shipment (c.i.f.): 0000, 2s. 4½d.; 000, 2s. 3¾d.; 00, 2s. 2¾d.; 0, 2s. 1¾d.; firsts, 1s. 8¾d.; seconds, 1s. 8d.; thirds, 1s. 6¾d.; quillings, 1s. 4d.; featherings, 1s.; chips, 5½d. per lb.

CLOVES.—Firm. Quotations for Zanzibar are nominal at 9s. 3d. per lb. for spot and 8s. 1d., c.i.f., forward.

COCHINEAL.—Black is from 7s. 3d. to 7s. 9d. per lb., as to quality, and silver grey, 6s. 3d. to 7s., spot.

COLCHICUM.—Quiet. Corms on spot are offering at from 2s. 3d. to 3s. 6d. per lb.; seeds: forward offers at 6s. per lb., duty paid.

COLOCYNTH.—Pulp on the spot is 1s. 9d. per lb., duty paid.

ELEM. —Spot offers are in the region of 245s. per cwt.

ERGOT. — Portuguese new-crop offers range from 17s. to 19s. per lb., c.i.f. No business reported.

GAMBAGE.—Good average Siam pipe is £45 per cwt., spot.

GENTIAN.—French natural on spot is 115s. per cwt., and 112s., c.i.f.

GINGER. — African on the spot is 107s. 6d. per cwt., and 95s., c.i.f., August-September shipment. Spot quotations for Jamaican are from 160s. to 200s. per cwt., as to quality, and from 137s. 6d., c.i.f., for shipment.

GUAIACUM RESIN.—Quotations are from 3s. to 3s. 3d. per lb. for spot material.

GUM ACACIA. — Kordofan cleaned sorts on the spot are 102s. 6d. per cwt.; shipment, 93s., c.i.f., buyer's licence.

HENNA.—Indian green leaves are about 7s. 6d. per cwt., on the spot. August shipment of Sudanese, 110s., c.i.f.

HONEY.—Spot supplies of Australian are from 105s. to 115s. per cwt.; as to quantity, and Jamaican, 130s. per cwt. Argentine material is from 120s. to 125s. per cwt.

IPECACUANHA.—Forward offers of Nicar-

aguan, July-August shipment, are from 45s. to 46s. per lb., c.i.f., and Colombian, 41s., c.i.f. Spot quotations are: Nicaraguan, 48s., and Colombian, 44s.

KARAYA. — No. 1 gum on the spot is about 230s. per cwt.; No. 2, 165s.; No. 1 for shipment is 185s., c.i.f.

KOLA NUTS.—African halves are available on the spot at 5d. per lb., 3¼d., c.i.f., prompt shipment.

LIQUORICE. — Anatolian natural whole root on spot in London is quoted at 52s. 6d. per cwt.; Syrian, natural, is 42s. 6d. Block juice quotations are from 180s. upwards, according to holder, duty paid. Turkish stick is 240s. per cwt., duty paid; Italian stick, 475s. per cwt., duty paid.

MACE. — West Indian pale blade is 8s. 6d. per lb., for shipment; 7s. 6d., c.i.f.

MASTIC.—Quotations for tears (No. 2) are from 12s. per lb., spot.

MENTHOL.—Chinese is firmer at 57s. 6d. per lb., duty paid. Brazilian is 45s., duty paid.

MERCURY.—Spot quotations are from £65 to £65 10s. per flask, ex warehouse.

MYRRH.—Aden selected sorts are quoted at from £17 to £18 per cwt., on the spot. Siftings are from £7 10s. to £8 10s., and granulated, £13.

NUTMEGS. — Quiet. West Indian 80's quoted at 3s. 4d. per lb. on the spot and 2s. 8½d., c.i.f., for shipment. East Indian for shipment, 2s. 8d., c.i.f.

ORRIS ROOT. — Offers of good quality Florentine are now 155s. per cwt., ex warehouse.

PODOPHYLLUM.—Emodi root on the spot is 275s. per cwt., nominal. Shipment offers are about 200s., c.i.f.

QUILLAIA. — Forward rates for whole bark are lower at £95 per ton, c.i.f.

RHUBARB.—Quiet. Shensi is 11s. 6d. per lb.; Double Deer No. 1, 8s.; other grades of Chinese rough round at from 3s. 9d. to 6s., all duty paid.

SAFFRON. — Mancha superior is offered at about 175s. per lb. on the spot for small lots.

SANDARAC. — Morocco is offering on the spot at 18s. per lb.

SARSAPARILLA.—Jamaican native red is about 2s. 6d. per lb., on the spot.

SENEGAL.—Quiet. Spot supplies are 12s. 6d. per lb. July-August shipment offers are 10s. per lb., c.i.f., for new-crop.

SEEDS.—ANISE.—Turkish, 135s. per cwt., in bond. CARAWAY.—Dutch quoted at 94s. per cwt., duty paid. CELERY.—Indian has been sold at 1s. 10d. per lb. spot London. CORIANDER.—Spot market quiet. Argentine splits quoted at 52s. 6d. per cwt., duty paid; Morocco, 52s. 6d., duty paid, and 48s., in bond. Shipment: Morocco remains

firm at 40s., c.i.f., for August shipment.
CUMIN.—Spot market dull. Cyprus, 185s. per cwt.; Indian, 180s. and Morocco, 190s., in bond. **DILL.**—Indian now offered at 80s. per cwt., spot. **FENNEL.**—Indian, 200s. per cwt.; French, 185s., duty paid, and 175s. in bond, all spot London. **FENUGREEK.**—Morocco on the spot, London or Liverpool, now 40s. per cwt., duty paid. New-crop for shipment has jumped to 37s. 6d. per cwt., c.i.f. **MUSTARD.**—English, 85s. to 105s., according to quality.

SENNA.—Firm. *Tinnevelly* wet-crop quotations (c.i.f.) are: LEAVES: Prime No. 1, 1s. 4d. per lb.; No. 2, 1s. 1½d.; No. 3, 10d.; PODS: f.a.q., nominal; hand-picked, 2s. to 2s. 6d., according to quality. *Alexandria*: Manufacturing PODS, 1s. 6d., c.i.f.; hand-picked, 4s. 6d. to 7s., spot.

SHELLAC.—Spot quotations are:—F.O.T.N., pure, 192s. 6d.; F.O. standard No. 1, 215s.; fine orange, 230s. to 290s. per cwt., ex-London warehouse.

STYRAX.—Spot is 7s. 3d. per lb., duty paid.

TRAGACANTH.—No. 1 ribbon on the spot is £150 per cwt.; No. 2, £130; No. 3, £95.

VALERIAN.—Steady. Indian is offered at 140s. per cwt., spot, and Belgian at 215s.

Essential and Expressed Oils

ALMOND.—English - distilled is from 6s. 6d. per lb.

AMBER.—Rectified on the spot is quoted at from 1s. 6d. per lb.

ANISE.—Spot supplies are offered at 8s. 6d. per lb., and shipment, 8s. 4½d., c.i.f.

BERGAMOT.—Nominal spot value is from 100s. to 105s. per lb.

BIRCH TAR.—Rectified is from 10s. to 12s. 6d. per lb., on the spot.

BOIS DE ROSE.—Brazilian on the spot is 33s. 6d. per lb.

CADE.—Supplies of Spanish are from 2s. per lb., ex warehouse, London.

CAMPHOR. WHITE.—Chinese is 4s. 6d. per lb., on the spot.

CANANGA.—Supplies to come forward are quoted at from 60s. per lb., c.i.f.

CARDAMOM.—English-distilled is from 500s. per lb. for spot material, and imported, 400s. per lb.

CASTOR OIL.—In minimum 2-ton lots the price of B.P. quality for July-August delivery is £206 per ton, naked, ex mill. For September-December delivery the price is £191.

CINNAMON.—B.P. oil on the spot is quoted at from 65s. to 70s. per lb. English bark oil is offered at 22s. 6d. per oz., Ceylon leaf, 10s. per lb., spot, for 5-cwt. lots.

CITRONELLA.—Spot prices for original drums are: Ceylon, 4s. per lb.; For-

mosa, 4s., in bond; Java, 4s. 9d., in bond. Forward: Ceylon, 3s. 7d.; Formosa 3s. 6d., and Java, 4s. 4d., all c.i.f., August shipment.

COD-LIVER.—Medicinal, B.P., is 11s. 6d. per gall. in charged returnable drums to retailers. Veterinary is from 11s. 4d. per gall.

EUCALYPTUS.—Drum lots of 70 to 75 per cent. eucalyptol on the spot are 7s. 3d. per lb., and 80 to 85 per cent., 7s. 6d.

GERANIUM.—Bourbon on the spot is 85s. per lb.

GINGER.—English-distilled oil is from 120s. to 150s. per lb., as to grade. Imported oils are available at from 85s. per lb., as to quantity.

LAVENDER.—French, 40-42 per cent. linolol on the spot is from 43s. 6d. per lb. Spanish spike is 11s. 3d. per lb.

LAVANDIN.—Quotations for spot supplies are about 17s. 6d. per lb.

LEMON.—Sicilian hand-pressed (4 per cent. citral) is quoted at from 40s. per lb. c.i.f.; spot is from 40s. to 45s.

LEMONGRASS.—Forward quotations are 8s. 3d. per lb., c.i.f. Spot supplies are offered at 8s. 9d. per lb.

LIME.—Limited supplies of West India distilled are about 65s. per lb., on the spot.

NUTMEG.—English-distilled oil is about 38s. per lb. Imported oil (B.P.) is offered at 30s. per lb., duty paid for drum lots.

ORIGANUM.—In original containers the price is 14s. per lb.

PALMAROSA.—Spot quotations for Formosan are 37s. 6d. per lb. East Indian 52s. 6d., c.i.f.

PATCHOULI.—Spot supplies of Penang are offered at 58s. per lb., and forward 52s. 6d., c.i.f.

PENNYROYAL.—Offers for immediate shipment are 25s. per lb., landed, duty paid for small lots.

PEPPERMINT.—Firm. Chinese *arvensis* oil on the spot is from 37s. 6d. per lb. for 5-case lots; Brazilian, 17s. per lb., drums; Italian "Mitcham" type, from 58s. 6d. to 60s.

PETITGRAIN.—Paraguay on the spot from 21s. per lb.

ROSEMARY.—Spanish oil on the spot is from 6s. per lb., duty paid, as to quantity.

SAGE.—Spanish is offered at 10s. 6d. per lb., spot.

SASSAFRAS.—Brazilian natural is offered at from 6s. 6d. to 7s. 6d. per lb., duty paid, according to grade.

SPEARMINT.—Firm. U.S.P. is scarce on the spot at 73s. per lb., nominal.

VETIVERT.—Bourbon in original drums is 155s. per lb., spot.

MANUFACTURING DIFFICULTIES IN MEXICO

MEXICAN pharmaceutical laboratories have been experiencing difficulties ever since—more than three years ago—the department of economy froze prices on branded products manufactured in the country. The Department has, in specific instances, permitted a price increase after studying reports of increased costs. Even so, costs of production have been out of proportion to increases allowed, and some laboratories with modest capital have been forced to close their doors on business.

As examples of the "skyrocketing" of prices experienced by the industry, an examination of costs for kaolin and glycerin from 1945 onwards gives a clear indication of conditions faced by manufacturers. Kaolin, obtainable from various sections of the Republic, was in 1945 priced at around 65 to 70 centavos per kilo. Today the cost has risen to \$3. In the same period glycerin has risen from \$2 50 pesos to \$12 per kilo. Theoretically manufacturers can import glycerin from the U.S.

at a much lower price than that paid for the domestic product, notwithstanding a high tariff. However, the problem of obtaining special permits for the product is so involved that it is almost impossible to obtain the required import permission and recently imports have been almost non-existent.

Another problem is the scarcity of bottles that developed about a year ago. Orders by laboratories are not met, owing to shortages in production. There is a special need for bottles of special types for the pharmaceutical industry. These, in the past, have been imported. Now the department has stipulated that, before an import permit is granted, the pharmaceutical house must show a letter in which a Mexican bottle manufacturer states that he is not in a position to supply. Such letters have not been forthcoming from the Mexican bottling industry, with the result that special products must, after considerable delay, be bottled in containers supplied by the home industry.

OVERSEAS ECONOMIC REPORTS

REPORTS on the economic and commercial conditions in Indonesia, Portuguese East Africa, Guatemala, and Peru, were published recently by H.M. Stationery Office, Kingsway, London, W.C.2. The following information of interest to the pharmaceutical and allied industries has been abstracted from the surveys:—

Indonesia.—The country's total imports of pharmaceuticals during 1950 were 10.2 million rupiahs (R.31.71=£1 for imports and exports), and perfumery, cosmetics, etc., R.3.9 millions. Total imports from the U.K. amounted to R.112.1 millions and exports were R.99.2 millions.

Guatemala.—The United States is by far the largest supplier of the country's imports. The values of pharmaceutical products imported in 1948 and 1949 were just over Quetzal 1 million (U.S. \$1 million). In recent years Guatemala has become the world's largest producer of citronella oil and the second largest producer of lemongrass oil. Experiments with geranium and patchouli are being conducted and it is believed that peppermint and wintergreen might be tried in the temperate uplands.

Portuguese East Africa.—The excellent medical services of the Province and its ever-increasing industries provide a ready

market for fine and heavy chemicals and pharmaceutical goods. Medical aid to natives is free and to government officials and their families, as well as permanent residents with incomes below escudos 2,000 per month (80 escudos=£1). Health services during 1950 took chemical products and pharmaceutical products to the value of contos 15,700 (1 conto=£12 10s.) by public tender (the normal means of acquiring the products there). During the year the country imported medicines valued at contos 2,823.

Peru.—About 30 laboratories make various pharmaceutical products and supply about 80 per cent. of local consumption. Capital invested in the enterprises is estimated at 30 million soles (£1=42.88 soles) and production at 150 million soles. About twelve factories make soap, using locally produced cotton-seed oil. Cosmetics are also produced including some well-known foreign brands on a royalty basis. Imports of chemical and pharmaceutical products in 1950 was 153 million soles (£3.8 millions) of which £96,000-worth (6 per cent.) come from the United Kingdom. In 1946 the U.K. goods imported were worth over £2 millions. The United States, Switzerland, Chile and Canada were the other chief sources of supply.

PRINT AND PUBLICITY

Poultry Products.—Pharmaceutical Specialities (May & Baker), Ltd., Dagenham, Essex, issue an 8-p. price list of their "poultry products."

Polythene Bottles.—A 6-p. leaflet on polythene containers entitled "Cut Transport Costs with Bottles that Bounce" is available from Casceloid, Ltd., Abbey Lane, Leicester, Leics.

Disinfectant in the Garden.—The use of Jeyes' fluid in the garden is described in an 8-p. leaflet issued by Jeyes' Sanitary Compounds, Co., Ltd., Millbrook, Chigwell, Essex.

Catalogue of Compacts.—Jarrett, Rainsford & Laughton, Ltd., Leominster Works, Lower Essex Street, Birmingham, issue a loose-leaf catalogue of their powder compacts entitled "Compacts by Stratton."

Film Catalogue.—A loose-leaf catalogue of 16 mm. sound films available on loan from Imperial Chemical Industries, Ltd., Bolton House, Curzon Street, London, W.1, has been issued by the company.

Hot Water Bottles.—An 18-p. catalogue of Suba-seal hot water bottles, bathing caps and pharmaceutical and chemists' sundries has been issued by W. Freeman & Co., Ltd., Suba-seal Works, Barnsley, Yorks.

History of a Company.—A 32-p. booklet issued by Polak & Schwarz (England), Ltd., 50 Great Cambridge Road, Enfield, Middlesex, deals with the history of the organisation to which the company belongs.

National Advertising.—WRIGHT, LAYMAN & UMNEY, LTD., 42 Southwark Street, London, S.E.1, are nationally advertising their coal tar soapless liquid shampoo.—Lucozade is being advertised in the "Radio Times" by LUCOZADE, LTD., Great West Road, Brentford, Middlesex.

Literature for Microscopists.—Among recent publications of George T. Gurr, Ltd., 136 New King's Road, London, S.W.6, are: "Biological Stains and Reagents, 1952" (28-p. catalogue); "Gurr's Commentary," No. 9. (4 pp.); "A New Lamp for Fluorescence Microscopy" and "Gurr's Staining Plate" (2-p. leaflets).

Medical Leaflets.—Leaflets, folders and booklets are obtainable from manufacturers as listed below:—

ALLEN & HANBURYS, LTD., Bethnal Green, London, E.2: "Gentle Persuasion—I-so-gel", "Sulpenin" (4-p. leaflets); "Prolonging the Action of Morphine with Hyperduric Morphine" (card); "A Simple Technique for Routine Use of Tuberculin Diagnostic Jelly, A. & H." (8-p. booklet).

BURROUGHS WELLCOME & Co., 183 Euston Road, London, N.W.1: "Foremost in Diabetes: Three Wellcome Insulins" (blotter); "Where Depression is a Problem—Tabloid Methedrine," "In the Management of Obesity—Methedrine" (4-p. leaflets); "Obstetrics: B. W. & Co. Products" (8-p. booklet).

CIBA LABORATORIES, LTD., Horsham, Sussex: "Viozol" (4-p. leaflet); "Sublingual Hormone Therapy with Linguets" (8-p. leaflet).

TRADE MARKS

From the "Trade Marks Journal," July 16

For toilet preparations for the hair (3).
SHAMPAIR, 706,656, by Icilma Co., Ltd., London, E.C.4.

For antibiotics, being pharmaceutical preparations (5).

SECLOMYCIN, 705,106, by Glaxo Laboratories Ltd., Greenford.

For preparations for purifying air (5).

ASTRAL, 705,607, by Astral Chemical Co. Blackburn.

For impregnated cloths for antiseptic, deodorising and disinfecting purposes (5).

ROCLOTH, 705,612, by Winthrop Products Ltd., London, S.W.1.

For pharmaceutical products, chemical products for hygienic purposes, medicated plaster, bandages, germicides and antiseptics (5).

PARATEBIN, 706,029, by Chemie Grunenthal G.m.b.H., Stolberg-im-Rheinland, Germany.

For moth-repelling and destroying preparations (5).

KRYSTA, 706,566, by Wilsons Cold Storage Ltd., London, N.W.10.

For all goods, excluding disinfectants (5).

PIXCYL, 706,773, by Genatosan, Ltd., Ipswich.

For pharmaceutical preparations of penicillin (5).

BI-STABILIN, TRO-STABILIN, TABILIN, 706,952-55, by Boots Pure Drug Co., Ltd., Nottingham.

For pharmaceutical preparations, and infants' and invalids' foods (5).

BENEFAX, 707,095, by Kylon, Ltd., London, E.C.2.

For pharmaceutical preparations (5).

MELMAX, 707,140, by Phillips Yeast Products Ltd., London, N.W.10.

PREDENTOR, 707,471, by Charles William Ivor Thomas, Plymouth.

LABLINGS, SUBLINGS, 707,512-16, by Cogan Laboratories, Ltd., London, W.C.2.

ESMIDE, 707,598, by Ciba Laboratories, Ltd., Basle.

INVOSE, 707,849, by Herts Pharmaceuticals, Ltd., Welwyn Garden City.

ALKAFY, 707,852, by International Chemical Co., Ltd.

For scientific research and laboratory instruments and equipment (9).

EGCO, 697,316, by the Emil Greiner Co., New York, U.S.A.

For photographic apparatus and instruments (9).

AGOMAR, 707,070, by Agfa Camera Werk München, Munich, Germany.

For combs for the hair, sponges, brushes made of plastics (21).

SHELBEX, 707,276, by Halex, Ltd., London, E.4.

Answers to Revision Questions

1. By stimulating the secretion of the adrenocortical hormones.

2. (a) (i) Oestrogens (oestradiol), and (ii) progestins (progesterone). (b) (i) Ethinylestradiol, stilboestrol, hexoestrol and dienestrol; (ii) Ethisterone.



Cussons

IMPERIAL  LEATHER

The Quality Toilet Soap everyone wants!

Fully supported by colour advertising in national home and class journals
A PRODUCT OF CUSSONS SONS & CO. LTD, 84 BROOK ST, GROSVENOR SQ, LONDON W.1

The
CHEMIST AND DRUGGIST
AUGUST 2, 1952

For Scientific

PILL & TABLET

Manufacture

COX
OF BRIGHTON

AN ORGANISATION THAT WELCOMES
YOUR ENQUIRIES FOR PHARMACEUTICAL
PRODUCTS FOR HOME AND EXPORT
MARKETS

Arthur H. Cox & Co. Ltd.

BRIGHTON, 7, SUSSEX